The Oil and Gas Journal

PRODUCING REFINING MARKETING

VOL. 25. NO. 47. TULSA, OKLAHOMA, APRIL 14, 1927

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Expect New Production Peak in May

Highest daily average estimated production in 1926, week ended Dec. 25, 2,385,139 bbls. Lowest in 1926, January 30, 1,915,960 bbls.

Bowlegs Sector of Seminole Area Will Boost Output, While Texas Fields Continue to Be Big Factor

By Andrew M. Rowley

Highest daily average estimated light oil production in 1926, week ended Dec. 25, 1,797,349 bbls. Lowest in 1926, Jan. 30, 1,371,600 bbls.

Operators expect a new peak of crude oil production for the United States to be reached during the early part of May when the 30 or 40 wells now nearing the sand are completed in the Bowlegs sector of the Seminole area in Oklahoma. Enough wells are drilling in the Seminole Field proper to prevent any very great decline in output there before that time and the production from other active sections of the country, especially West Texas and California, is expected to offset declines which may be expected in fields where operations are being curtailed because of low prices for crude.

West Texas fields are an important factor in the general situation, although the big flush output of the Seminole area in Oklahoma has been more in the limelight. It is estimated if the wells in Pecos, Winkler and Crane Counties in West Texas were permitted to produce at their full capacity, production of that area would jump to 100,000 barrels daily. With the construction of pipe line facilities to these fields, it is not without the realm of possibility, that the output of the area may be increased materially within the near future.

While at this writing none of the other major crude oil purchasers had met the most recent price reduction announced by the Magnolia Petroleum Company, it is felt if production continues to climb and the new peak expected in May materializes, another general price adjustment may be expected and it is not entirely improbable the differential between grades may be still further reduced or a flat rate established for the higher grades.

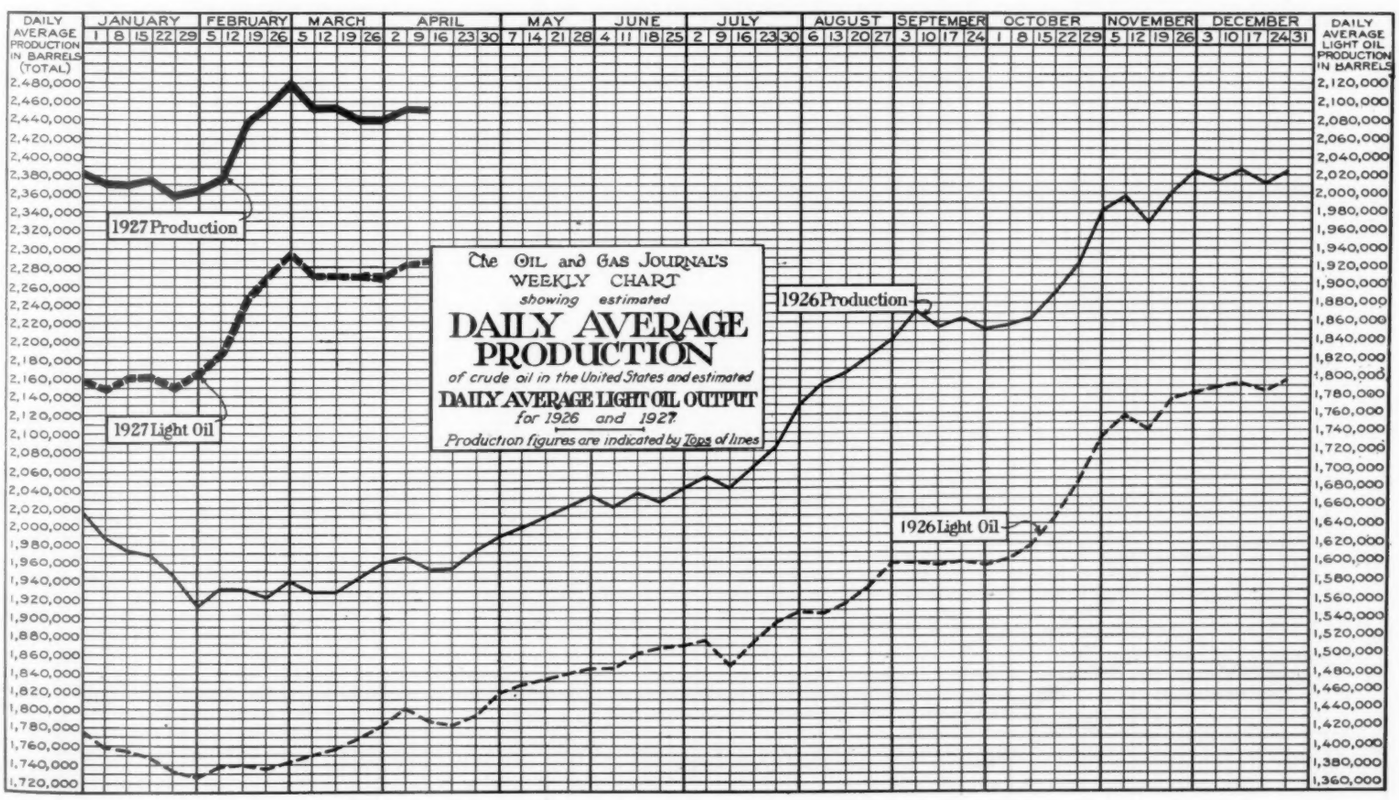
As a result of present conditions, probably more storage is being erected and more pipe lines being constructed than at any other period for years. Companies and individuals financially able to store crude are arranging to do so and these will be in a position to dispose of this crude at more advantageous prices when the present overproduction has passed and prices again more nearly represent values.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended April 9, and a comparison with the previous week follows:

	Apr. 9		Apr. 2	
Oklahoma—	Light	Heavy	Light	Heavy
Tonkawa	23,290	.....	23,070	.....
Burbank	44,105	.....	45,480	.....
Other Osage Fields	35,185	.....	35,240	.....
Cushing and Shamrock	21,190	.....	21,225	.....
Bristow and Eastern Bristow	27,230	.....	27,205	.....
Cromwell	13,415	.....	13,380	.....
Garber	17,170	.....	17,315	.....
Blackwell-Braman	14,155	.....	13,840	.....
Seminole	334,415	.....	331,210	.....
Wewoka	17,105	.....	18,415	.....
Northern Miscellaneous	111,215	.....	111,940	.....
Southern Fields	67,330	.....	66,565	.....
Total Oklahoma	725,805	.....	724,885	.....
North Louisiana	40,950	11,300	40,315	11,000
Arkansas	25,290	97,120	25,680	98,230
North Central and West Texas	261,465	.....	259,177	.....
Texas Panhandle	118,300	.....	117,800	.....
East Central Texas	38,801	.....	39,235	.....
Kansas	116,955	.....	116,340	.....
Total Mid-Continent Area	1,327,566	108,420	1,323,432	109,230
Gulf Coast	.....	147,287	.....	149,345
Southwest Texas	.....	36,930	.....	38,830
Eastern	105,000	.....	104,500	.....
Rocky Mountain Area	83,705	.....	85,885	.....
California—				
Santa Fe Springs	44,000	.....	44,000	.....
Long Beach	92,000	.....	92,000	.....
Torrance	6,000	18,500	6,000	19,000
Huntington Beach	73,000	.....	74,000	.....
Dominguez	18,000	.....	18,000	.....
Rosecrans	13 000	.....	11,500	.....
Inglewood	24,500	13,000	24,500	13,000
Ventura Avenue	52,000	.....	50,000	.....
Seal Beach	31,000	.....	32,000	.....
Remainder of State	59,000	199,000	59,000	199,000
Total California	412,500	230,500	411,000	231,000
Total United States	1,928,771	523,137	1,924,817	528,405
Grand Total		2,451,908		2,453,222

Total Decrease, 1,314 Bbls.; Light Oil Increase, 3,954 Bbls.



Oklahoma Fuel Oil Prices Decline

Quotations Lowest Since Summer of 1925. Unsettled Crude Situation Still Factor in Refined Market

By C. O. Willson

The Oklahoma (Group 3) refined market during the past week continued to be dominated by the crude situation in the Mid-Continent. The uncertainty in the latter was clearly reflected in the price trend of refined products, especially as it related to gasolines.

A week ago the trade generally was expecting an additional reduction in Mid-Continent crude schedules. This expectation kept buyers out of the gasoline market, although the sellers were generally firm in their quotations. On Thursday of last week, it was thought that the expected general reduction in crude prices had materialized when the Magnolia Petroleum Co. announced a new schedule for Oklahoma, Kansas and North and Central Texas with reductions of 15 cents on crude above 33-degree gravity.

At this writing, however, not one of the other major purchasers in the Mid-Continent had met this reduction or had changed its schedules in any way. Thus the feeling of uncertainty in regard to crude price changes has not been cleared up, and the refined market is as unsettled as it was a week ago. This situation will continue until it is definitely apparent what the trend in crude prices is to be for the immediate future.

With the gasoline demand still slow, refiners did not maintain as firm a market as they did the week before. Several sellers were willing to lower their quotations, and prices on most grades are one-fourth cent lower. The demand did not materially improve at these lower prices, and the buyers obviously are expecting still further concessions.

The decline in some of the other refined products was still more apparent. Fuel oils experienced a rapid slump, and for the first time in over a year and a half the low gravity grades were available in Oklahoma under $1.00. In regard to fuel oil, complaint was heard from Oklahoma refiners relative to low quotations from plants located outside the state. One refiner located at East Chicago, Ind., is reported to have sold considerable 22-26 gravity material for April shipment at 90 cents basis Group 3. This price was about 10 cents lower than the prevailing price in Oklahoma. Gas oil quotations were also one-eighth cent lower, with kerosenes one-fourth cent lower. Bright stocks and cylinder stocks are slow, although sellers have not made any general changes in their quotations on these products. With the exception of Grade A, the natural gasoline market was firm during the week.

REFINED MARKET BAROMETER

Refined market reports from all sections of the United States during the past week showed important price reductions in one or more products. In some refining areas sellers found it necessary to reduce quotations on all the important products. Reductions in gasoline tank car prices developed on most grades in the eastern and Mid-Continent fields. These reductions were reflected in lower gasoline tank wagon and service station prices in the eastern and southeastern states with scattered reductions effective in other areas. Mid-Continent and Middle West refiners led the slump in fuel oil and gas oil prices. These continued reductions at interior points for the first time have resulted in a feeling of uncertainty regarding coastal prices on these products which have been firm for several weeks. No important price changes were reported in lubricating oil prices. No further reductions in wax prices were announced during the week. Natural gasoline prices were lowered when any changes were made.

Mid-Continent—Unsettled crude market reflected in slow gasoline demand with lower prices. Fuel and gas oils weak and prices lower. Kerosene prices lower in Oklahoma and Kansas. Lubs unchanged. Wax weak.

Atlantic Seaboard—Generally weak market tone. Both gasoline tank car and tank wagon prices reduced. Kerosene weak. Lower prices in fuel oil and gas oil prices expected. Good demand for lubs. Export movement below normal.

Pennsylvania—Gasolines and kerosenes fairly firm. Fuel oils weak. Excellent demand for neutrals. No change in bright stocks.

Chicago—Market generally dull with lower prices effective on gasolines, kerosenes, fuel oil and gas oil.

California—Kerosenes and distillates prices lower. No change in refinery gasolines. Natural gasolines weak.

Gulf Coast—No price changes.

Expect Better Demand

From the viewpoint of the refiners, an improved gasoline demand is expected to materialize by the end of the week. The longer the major crude purchasing companies fail to meet the Magnolia reduction, the greater the expectation on the part of the refining and marketing fraternities that crude prices are at bottom.

Unless action is taken by these other buyers in a few days, it is expected that the Magnolia will have to return to its former schedules. That action would stabilize the crude market for April at least, and would no doubt result in an increased demand for gasoline. In anticipation of this development, there were many refiners the first of the week who were refusing to give the price concessions obtainable from other sellers.

In this connection, it was pointed out by several market observers that buyers are expecting too much from a general crude reduction, should it materialize before the end of the week. These buyers apparently feel that with a crude cut the refiners would be in a position to lower their gasoline prices. Refiners contended that they overlook the fact that since the March 14 reduction in crude schedules, fuel oil, gas oil, kerosene and distillate prices have declined, with gasoline quotations slightly lower. This means that a refiner's chance for profit with an additional crude cut would not be as favorable as it was on March 14. With further declines expected in fuel oil, gas oil, kerosenes and distillates, it is apparent

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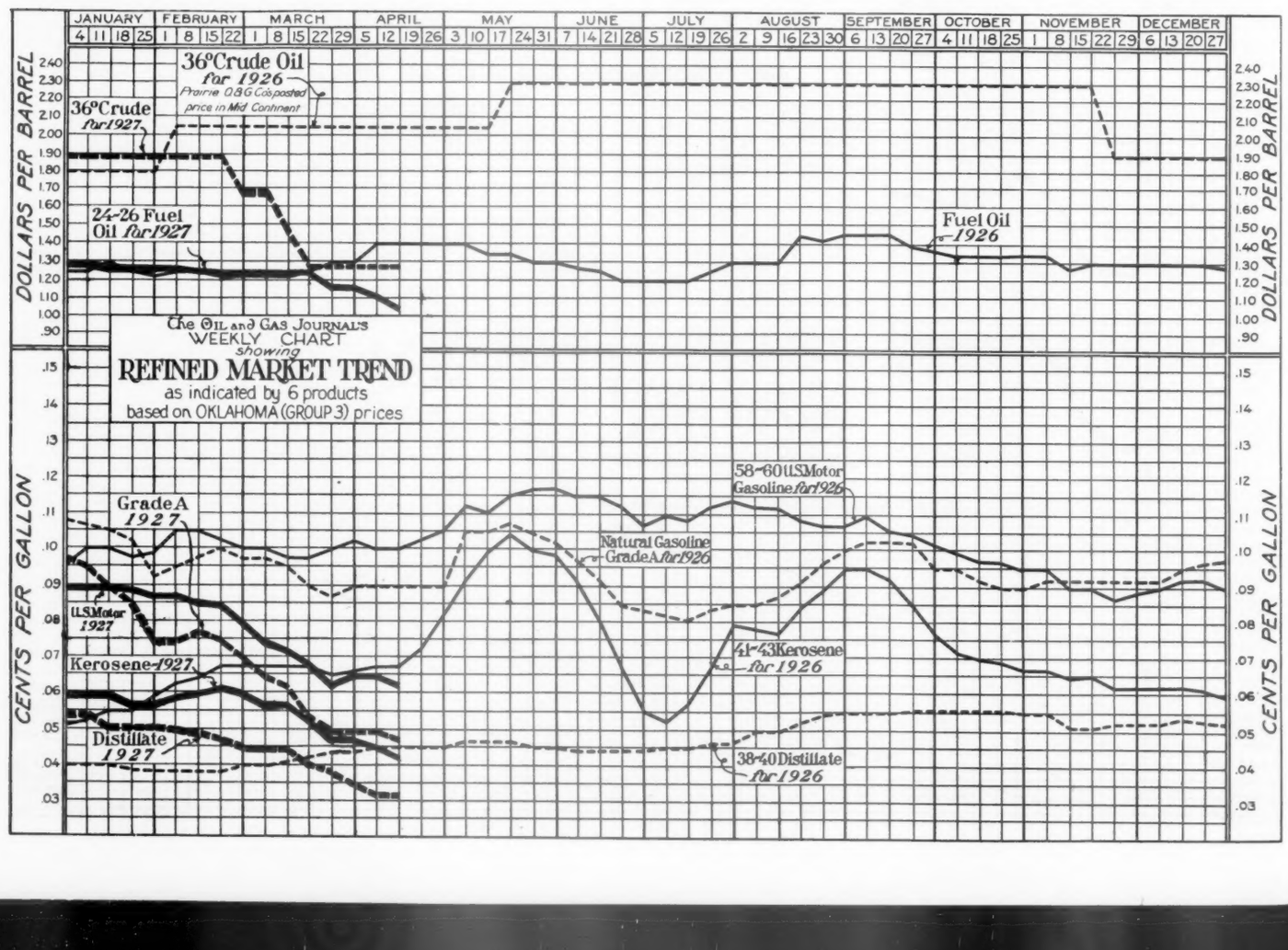

Pipe Line Projects Break All Records

Provisional Contracts Signed for Amarillo-Denver Line. More Than 2,500 Miles Being Built or Planned

By Andrew M. Rowley

Provisional contracts have been signed by the Standard Oil Co. of New Jersey, the Prairie Oil & Gas Co. and the Public Service Co. of Colorado, a subsidiary of Cities Service Co., for the construction of a 400-mile natural gas pipe line from Amarillo, Tex., to Denver, Colo. Arrangements for the building of the line are conditional upon the granting of a satisfactory franchise by the city of Denver. This matter now is up before the city council of Denver and, it is believed, the question will not be entirely decided for two or three months. If a satisfactory rate is not granted by the city of Denver, the project of building the long line will be abandoned.

The Public Service Co. of Colorado is said to have the franchise for the distribution of gas in Denver. Should such a line be built as is now contemplated, it is probable a number of other cities along the proposed route would be supplied with natural gas. Many of these towns now are burning artificial gas.

J. B. Marks, executive vice president of the Colorado Fuel & Iron Co. of Pueblo, Colo., is said to have made formal application for a supply of natural gas for the company's steel mills at Pueblo. Should this application be granted, this company probably would be one of the largest individual consumers, at least, on the line.

To Cost $22,000,000

A line such as is under consideration probably would be of 22 or 24-inch pipe and would cost approximately $22,000,000. It is understood surveys have been made and tentative locations selected for the erection of compressor stations but no definite action in the way of actual construction of the pipe lines or stations will be taken until the city of Denver has granted a franchise which would permit a rate sufficient to warrant the vast expenditure necessary to construct the line.

In connection with the announcement of the signing of provisional contracts for the construction of the line to Denver, the Empire Gas & Fuel Co. has announced it has placed orders with the Youngstown Sheet & Tube Co. and Spang, Chalfant & Co., Inc., for 250 miles of 20-inch steel pipe for the proposed line from the Texas Panhandle to Kansas City. The company also stated it had placed orders for engines and equipment for four compressor stations for the line, and for couplings for half the length of the 250 miles. Every other joint of pipe on the line will be welded and every other joint coupled.

A survey of the proposed route of this line is being made at this time and an official of the Empire company stated the exact route of the line had not as yet been determined. He stated also it had not been determined as yet whether four or six compressor stations would be needed, this depending on whether the line would extend in a straight line or whether it would be constructed to connect with some point not on a direct line from the source of gas to point of distribution. The line, it was indicated, might be constructed from some point in the Panhandle near Pampa, Tex , and thence to Wichita, Kans., and then to Ottawa to connect with existing pipe lines of the company at the latter point.

The exact capacity of the line had not been decided upon although it was said such a line probably would carry 100,000,000 feet of gas. It was indicated actual construction of the line was expected to start about May 15 and it was stated the mills would start rolling pipe for the line this week.

The Texas Company and the Columbian Carbon Co. have announced they will jointly construct a big natural gas pipe line from the Texas Panhandle to Kansas City, Mo., if contracts are made with them by industries of Kansas City assuring a market there for 70,000,000 feet of gas daily.

Another Company Busy

Another company has appeared as competitor for the franchise for piping natural gas from the Amarillo-Panhandle Field to the city gate at Kansas City, Mo. The three companies now interested are: The Texas Company-Columbian Carbon Co.-Hope Engineering Supply, the Empire Companies, representing the H. L. Doherty interests and the Southwestern Oil & Development Co. of Los Angeles.

The Southwestern company is the third and last concern to submit a franchise, John L. Knorpp, head of the firm, confirmed the report that it has made a proposition to H. F. McElroy, city manager of Kansas City, offering to lay two 24-inch gas pipe lines from the Amarillo-Panhandle Field to Kansas City and offer gas at from 14 to 33 cents per 1,000 feet for industrial purposes and to furnish a supply to the H. L. Doherty distributing subsidiary, the Kansas City Gas Co., at 15 cents per 1,000 feet, that can be used for domestic purposes.

According to Mr. Knorpp the two lines would be able to handle an unlimited supply of nautral gas from the Amarillo Field and with two lines the danger of a tie-up of one line would not mean a tie-up in supply.

The Kansas City Star says the city administration is waiting for application to be made for a franchise which in turn is held up until the Texas-Columbian companies may be assured of contracts sufficient to justify the application for a grant. Contracts in turn await the Chamber of Commerce report. The administration at first took the position that the Doherty company should buy some of the cheap Texas gas at the city gates and cut down the domestic rate of 95 cents.

The Kansas City Chamber of Commerce subcommittee on industrial gas, named by Lou E Holland, chamber president, is composed of W. L. Allen, president Sheffield Steel Corp., chairman; H. R. Ennis, realtor; Dr. Roy Cross, secretory Kansas City Testing Laboratory, and F. S. Dewey, vice president Kansas City Power & Light Co.

Dr. Roy Cross' View

In reply to questions from the Kansas City Star, Doctor Cross wired from Los Angeles as follows:

"I cannot speak for the committee, but personally I believe the gas project of the Texas corporation—the Columbian Carbon Co.—the most important industrial opportunity presented Kansas City in a decade. The Texas-Columbian proposal should be supported over any others with which I am familiar, because it offers:

"First, a complete new supply line specifically for Kansas City from the largest new gas field known, with the latest improver equipment for transporting and storing gas in a quantity more than sufficient for the present possible industrial requirements.

"Second, it is to be financed efficiently out of pocket money by responsible companies with substantial going business organizations.

"Third, it supplements but does not compete with the present gas supply, and may aid in providing cheaper domestic gas.

"Fourth, it offers a reasonable rate schedule in view of large investment, superiority of gaseous fuel and competition with coal and oil.

"The quality of gas, based upon a sample analyzed, is very good, giving heat value well over 1,000 B.t.u. per cubic foot, or more than 15 per cent better than the present gas supplied."

PIPE LINES UNDER CONSTRUCTION OR CONTEMPLATED TO COST OVER $100,000,000

The most extensive pipe line building program in the history of the petroleum industry is now under way either in the form of actual construction work being done or through projects planned and contingent upon the granting of certain franchises and contracts.

The cost of the lines now building and those surveyed and which will be constructed if franchises are granted and contracts for the product procured totals more than $100,000,000 and represents a distance of more than 2,500 miles.

The natural gas companies are especially active at this time, the Standard interests having signed provisional contracts for the building of a pipe line from Amarillo, Tex., to Denver, a distance of 400 miles, while three concerns, the H. L. Doherty interests, The Texas Company and Columbian Carbon Co. and the Southwestern Co., are all planning big natural gas pipe lines from the Texas Panhandle to Kansas City. In the East, the Philadelphia Co. is building a long line from the Kentucky fields to Pittsburgh, the cost and mileage of which is not included in total figures given above.

The crude oil producing and transporting companies are expending millions of dollars in constructing pipe lines. Work has been under way for some time by the Prairie Pipe Line Co. on its 208-mile line from the Texas Panhandle to connect with its existing line at Addington, Okla. The Humble is building a line from the Panhandle to connect with its present system at Comyn, Tex., and is enlarging its line from Comyn to Hearne and from Hearne to the Webster tank farm near Houston. The Gulf and Magnolia are building a 235-mile line from the Panhandle to connect with lines in Eastland County, Texas. The Humble recently announced plans for the building of a 400-mile line from McCamey, Tex., to Corpus Christi. In addition, about 235 miles of pipe lines have been constructed by companies operating in the Seminole Field in Oklahoma. In the Gulf Coast area, the Houston Oil Co. and other concerns have been busy enlarging their systems.

AMERICANS WILL DRILL FOR OIL SOON IN THE KINGDOM OF IRAQ

By James McIntyre

The Turkish Petroleum Co. will soon begin the exploration for oil in the Kingdom of Iraq, Asia Minor, according to Stanley Chapman, who has been in the United States for the past six weeks arranging for drilling crews and material.

The company, Mr. Chapman says, will drill eight rotary tests and two shallower cable tool tests to complete its preliminary wildcatting program. The rotary tests will be sent to a depth of 4,500 feet if oil is not developed above that depth. Complete outfits such as are used in California fields will be utilized, including provisions for coring interesting and possibly significant formations. The drillers will for the most part be Californians and experienced in drilling deep holes in the Pacific Coast fields.

The Turkish Petroleum Co. is capitalized by the Standard Oil Co. of New Jersey, the Standard Oil Co. of New York, the Anglo Persian Oil Co., the Gulf Oil Corp., the Royal Dutch-Shell interests, the French Government and some minor interests. The companies formed a pool after the United States, France and other governments had protested against British action in taking over the Mesopotamian oil fields as a part payment for war damage suffered at the hands of Turkey.

The concession lies north of Bagdad in Mesopotamia and south of Mosul. Roughly speaking, it is about 150 miles long (northwest to southeast) and about 60 or more miles in width. The structure is a continuation of that on which the Anglo Persian Oil Co. is producing in Persia. It is a dolomitic limestone, with no sand so far as is known. The Anglo Persian has not penetrated the limestone as it has got production in the top of the lime and has contented itself with this, which is only as much as it can handle through its pipe line.

Eight Rotary, Two Cable Tests

The Turkish Petroleum Co.'s concession is traversed by a narrow-gauge railroad. Its field headquarters are at Tuz Khurmatli, about 14 hours ride by train from Bagdad. The first tests in the field will be scattered. Sixty miles south of Tuz Khurmatli two wells will be drilled about 11 miles apart. Southeast of the headquarters, about 25 miles distant, two wells 12 miles apart will be put down. Forty miles north and 20 miles west of the headquarters a well will be drilled and another about 20 miles farther east. Six miles from Kirkuk, which is north of Tuz Khurmatli and 12 miles southeast of Kirkuk have been picked for tests. The above are all to be rotary-drilled wells, Mr. Chapman says. Two cable tool tests on the western part of the concession close to the River Tigris will complete the present program.

The rotary tests may go to 5,000 feet. They will be started with a 25-inch hole and 21-inch casing will be set as the first string. The cable tests are not expected to go deeper than 1,500 feet. The oil is expected to be found in local highs. The geological work has been done under the supervision of a noted Hungarian scientist, Professor deBockah.

To get the drilling campaign started

(Continued on Page 94)

Fry Pool Is Great Shallow Oil Field

Production During March From 157 Wells Totaled 503,531 Barrels. Drill Wells in From 15 to 20 Days

By C. D. Lockwood

FORT WORTH, Tex., Apr. 11.—With the possible exception of the Cook Ranch Pool in Shackelford County and the Yates Pool of Pecos County, the Fry district of Brown County is the greatest shallow field under development in Texas. During March, 157 wells in the Fry Pool proper produced a total of more than 500,000 bbls. of high-gravity crude, the actual pipe line runs having amounted to 503,531 bbls. This oil averages between 41 and 42 degrees gravity, which commands a price of $1.38 to $1.40 in the present market.

The total production of the main pool to date from last July when William V. Lester's discovery well, No. 1 Fry, was placed on production, has been 1,470,988 bbls. March was the record month, although February's output was 357,812 bbls. and January's production amounted to 277,853 bbls. from 78 wells.

The majority of these producers have been drilled with drilling machines, just two standard rigs having been erected in the field. The average depth to the producing sand is 1,300 feet and the cost of drilling averages roughly at $10 a foot, although some of the wells drilled on properties owned by the smaller companies and individuals have been completed on the pump and into the tanks for as little as $8,000 and $9,000, depending largely on the amount of pipe left in the hole. The standard practice of some of the larger concerns is to put one or two joints of 15-inch, a string of 8-inch and a string of 6-inch in the hole but this depends to a large extent on local conditions.

Short Drilling Time

The average drilling time is about 20 days but some of the largest producers in the pool have been drilled into the sand within 12 to 15 days after they were started. The fastest time on the Sinclair Oil & Gas Co.'s 80 acres was 11½ days. This record was made by the drillers on No. 21 which was completed last week, and a number of others on nearby leases have about equalled this speed.

When 1,300-foot wells, which can be drilled in 15 to 20 days at a cost of $10,000 to $13,000 each, produce at the rate of 600 to 2,280 bbls. initial production and the per acre recovery amounts to more than 4,000 bbls., the district in which they are located deserves careful consideration. Figures on which to base estimates of ultimate recovery in the Fry Pool are incomplete as yet but from the behavior of some leases it seems that ultimate recovery may run as high as 10,000 bbls. The Sinclair lease in 3 months has produced 313,490 bbls., or nearly 4,200 bbls. per acre. The first wells were completed early in January and the entire 75 acres has now been drilled up, having 23 producers on it. The output during March was 174,375 bbls., or more than half of the total, and the company has installed air compressors on 10 of the wells which may affect ultimate recovery one way or the other, nobody knows how or how much. The gas pressure is declining rather fast in this part of the field and the two compressors which have been sufficient to flow the 10 wells are now inadequate so two more are being added and these will be ready in a couple of weeks. Individual gauges on these wells have been difficult to obtain due to the fact that several of them flow into the same gas-tight flow tanks or gas traps, along with wells not on air, but the production superintendent estimates that the output with the aid of air pressure is about the same as that obtained by swabbing. The cost of swabbing a well runs as high as $80 to $100 daily and the cost of producing a well in this field by air is estimated not more than $3 daily. It is figured that more oil could probably be obtained by swabbing than by the use of air after the natural pressure subsides but the difference in production, if any, will be more than offset by the saving of some $77 to $97 daily in lifting cost, especially at the current market price of crude. The $3 per day estimate of the air lift does not include the cost of installation and machinery but allows a little for depreciation as the equipment is practically all salvable. Definite results are difficult to ascertain as yet due to constant experimenting on these wells.

Trying Air Lift

The Amerada Petroleum Corp. is trying out air lift on four of its wells on the lease just west of the Sinclair property which has, in 7 months, produced more than 2,400 bbls. per acre, the total production of the 80 acres to date having amounted to 195,385 bbls.

William V. Lester and associates already have a recovery of 4,600 bbls. to the acre on their discovery lease of 50 acres, the total production being 232,011 bbls. The discovery well, No. 1 J. H. Fry, first topped the pay sand June 20 last but had bad luck when the rig burned and was not put on production until shortly after the first of July. Since that time 18 producers have been drilled on the lease, and last month the 18 wells tanked 22,351 bbls. Water has been in evidence on this lease for several months but is gradually becoming a more serious problem. At the March rate of production, the per acre recovery on this lease will reach the 5,000-bbl. mark by May 1.

The largest total yield of any lease in the pool has been made by The Texas Company's 320 acres on the Lowe farm, purchased about February 1 from George A. Henshaw and associates for $2,000,000. Recent developments on the south side of this property have made it look more valuable than it appeared at the time of the transaction, J. K. Hughes Developing Co. having brought in a couple of excellent producers on the Shore tract which offsets the Lowe on the south. The largest of these, No. 3, was good for 2,280 bbls. and it revived the drilling campaign which would otherwise have subsided due to the completion of drilling requirements on the Sinclair, Amerada, Lester Barbara Oil Co. and Rex-Pyramid leases up north of the Lowe. Dry holes along the east line of the Lowe property and on the north edge of the pool also put a damper on drilling in that direction. To the west, of course, production has been fairly well defined for several months. The Magnolia Petroleum Co.'s M. E. Fry lease has produced only 14,426 bbls. in the 6 months since the first well was completed. All of the seven wells are located along the east line of the property, and two others drilled just west of that line were dry. The Amerada Petroleum Corp.'s M. E. Fry lease has just two producers which make very little oil, the total runs from No. 1 and No. 3 having been 1,428 bbls. in 7 months. Well No. 2 on this lease, west of No. 1, was a failure.

The Humble Oil & Refining Co.'s M. E. Fry lease, north of the William V. Lester and associates' property, has produced 18,300 bbls. in 8 months but the 5 wells yielded only 434 bbls. in March and the northernmost producers are very light. The Magnolia Petroleum Co. further eliminated the pool to the north when No. 2 Metts was dry at 1,360 feet.

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ANNOUNCE PROGRAM FOR N. P. A. MEETING AT CAMBRIDGE SPRINGS

The semiannual meeting of the National Petroleum Association which will be held at Cambridge Springs, Pa., April 28 and 29, will be devoted to business sessions with morning and afternoon sessions daily. The only entertainment feature will be the Fellowship Supper on Thursday evening, April 28 at the Hotel Riverside where all business sessions will also be held.

Several prepared papers will be presented at the business sessions with reports from the several committees in charge of the various phases of the association's activities. The general subjects to be discussed have been divided under the heads of Standards and Tests, Trade and Commerce, Manufacture, Cost Accounting and Traffic and Transportation. Informal discussion will follow the presentation of all papers.

Following is the two-day program as announced by the association:

Thursday Morning, April 28

10 a. m. President Keeney presiding.

"The Association Moves Forward"—O. P. Keeney.

General subject: Welfare and Insurance.

a. "Progress in Fire Prevention"—Harry E. Newell, secretary, National Fire Protection Association, and secretary, Committee on Flammable Liquids.

b. "The Fire Marshals in Action"—James H. Herbert, president of the Fire Marshals Association.

"Do You Make Contracts?"—Houston Dunn, secretary-treasurer, National Petroleum Mutual Fire Insurance Co.

General subject: Standards and Tests.

a. "The Bureau of Standards and the

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PRODUCTION BY MONTHS IN THE FRY POOL, BROWN COUNTY, TEXAS

	July		August		September		October		November		December		January		February		March		Totals
	Wells	Bbls.	Wells	Bbls.	Wells	Bbls.	Wells	Bbls.	Wells	Bbls.	Wells	Bbls.	Wells	Bbls.	Wells	Bbls.	Wells	Bbls.	Bbls.
Amerada Petroleum Corp., J. H. Fry	...	...	1	361	1	3,270	3	8,142	7	25,590	11	25,327	16	32,302	17	51,072	23	49,321	195,385
Amerada Petroleum Corp., M. E. Fry	...	...	...	.....	1	180	1	62	2	510	2	186	2	434	2	56	2	.....	1,428
Barbara Oil Co., Metts	...	...	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	3	1,204	8	41,075	42,279
Barbara Oil Co., Willis	...	...	...	.....	...	.....	...	.....	...	.....	...	.....	1	2,418	2	4,452	4	10,075	16,945
J. K. Hughes Development Co., Shore	...	...	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	2	9,021	9,021
Humble Oil & Refining Co., M. E. Fry	...	...	2	1,085	4	3,150	4	4,240	5	5,460	5	2,759	5	465	5	700	5	434	18,300
Humble Oil & Refining Co., J. H. Fry	...	...	...	.....	...	.....	1	217	4	1,500	4	465	4	1,054	4	.....	3	3,937	7,173
Humble Oil & Refining Co., Metts	...	...	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	1	336	2	1,643	1,979
William Lester and others, J. H. Fry	1	868	3	3,503	5	7,380	6	14,043	10	49,170	15	63,674	17	48,174	18	22,848	18	22,351	232,011
Magnolia Petroleum Co., M. E. Fry	...	...	...	.....	...	.....	3	682	5	2,370	6	5,394	6	3,441	7	1,764	7	775	14,426
Powers & McKenna, Shore	...	...	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	1	217	217
Quinn and others, Pugh	...	...	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	2	868	868
Rex-Pyramid Oil Co., J. H. Fry	...	...	...	.....	...	.....	...	.....	...	.....	1	18,383	4	44,671	6	30,772	10	31,403	125,229
Sinclair Oil & Gas Co., J. H. Fry	...	...	...	.....	...	.....	...	.....	...	.....	...	.....	3	38,595	10	100,520	23	174,375	313,490
The Texas Company, Lowe	...	...	...	.....	...	.....	1	9,765	4	23,190	4	6,572	13	84,289	19	129,472	30	132,492	385,780
The Texas Company, Pugh	...	...	...	.....	...	.....	...	.....	1	7,170	3	21,545	5	16,368	8	8,456	11	6,603	60,142
Wentz Oil Corp., Shore	...	...	...	.....	...	.....	1	62	2	7,140	2	8,370	2	5,642	3	6,160	5	7,905	35,279
Wentz Oil Corp. (Forsythe), Shore	...	...	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	1	11,036	11,036
Total Fry Pool proper	1	868	6	4,949	11	13,980	20	37,220	40	122,100	52	152,675	78	277,853	105	357,812	157	503,531	1,470,988

GREATER FRY DISTRICT

Bowers and others, Eads	...	...	...	.....	1	210	1	2,232	2	2,310	3	2,604	3	2,945	3	2,352	4	2,759	15,412
Gibson Oil Corp., Shore	...	...	...	.....	...	.....	...	.....	...	.....	1	992	1	682	1	532	2	713	2,919
Gibson Oil Corp., White	...	...	1	961	1	870	1	2,976	1	1,920	1	992	2	744	3	896	3	651	10,010
C. O. Moore, Brinson	...	...	...	.....	...	.....	...	.....	1	840	2	1,860	2	899	2	812	2	837	5,244
Price & Daniels (Charter Oil Co.), Andrews	...	...	...	.....	...	.....	...	.....	...	.....	1	2,263	1	2,294	2	2,296	2	1,860	8,713
Roxana Petroleum Corp., Whiteside	...	...	...	.....	...	.....	...	.....	...	.....	...	.....	1	1,488	1	1,288	1	1,178	3,954
O. H. Shoup, Jr., Byler	...	...	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	1	2,996	4	7,161	10,157
Sawyer and others, White	...	...	...	.....	1	1,650	2	961	2	1,440	4	1,922	4	3,348	4	1,568	6	1,550	12,439
Sinclair Oil & Gas Co., Shore	...	...	...	.....	1	90	1	620	1	.....	1	.....	1	.....	1	.....	1	155	865
Sinclair Oil & Gas Co., Lucy Shore	...	...	...	.....	...	.....	1	62	1	540	1	310	1	155	1	252	1	155	1,474
The Texas Company, Byler	...	...	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....	2	1,147	1,147
Total Greater Fry	...	...	1	961	4	2,820	6	6,851	8	7,050	14	10,943	15	12,555	17	12,992	28	18,166	72,338
Grand total	1	868	7	5,910	15	16,800	26	44,071	48	129,150	66	163,618	93	290,408	122	370,804	185	521,697	1,543,326

Prices Out of Line With Intrinsic Worth

Flush Pool Development Only Temporary. Place of South American Crude in Future Production

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Apr. 11.—The decline in American oil prices does not appear to have placed a curb on foreign oil development to any extent. This is an interesting fact, in as much as the depression here has come practically at the culmination of an era of intensive development of foreign oil concessions. Not including the money placed in unproductive wells in Colombia and Venezuela, the investment in oil development in the two countries in the past five years is estimated to have aggregated over $250,000,000.

The development of the oil resources in these two countries has just now reached a stage where this oil can be exported to the United States in important quantities. These exports are now running at the rate of 100,000 bbls. daily from Colombia and Venezuela, combined. In March, about 80,000 bbls. daily were exported to the Atlantic Coast of the United States.

This South American oil can be judged an important factor in the American oil market at the present time, but not to the extent of having affected the level of crude oil prices. In fact the crudes from Colombia and Venezuela seem to have a special place in American refining operations apart from that occupied by American crudes. Neither Colombian nor Venezuelan crudes compete directly with the crudes which were most severely reduced in price this year.

The crudes most affected by the price cutting in this country were the grades from 36 gravity up, and reductions ranged from about 60 cents a barrel up. Colombian crude averages about 29 gravity, and the well price is said to have been cut about 40 cents a barrel. The bulk of the oil produced in Venezuela averages 20 gravity, and the corresponding grade of California crude has been cut 25 cents a barrel. These reductions are not believed to have been extensive enough, so far as Colombian and Venezuelan crudes were concerned, to affect development of going concessions in those countries.

The roster of American refineries on the Atlantic Seaboard using Colombian and Venezuelan crudes is impressive. It has grown to a point indicating the permanent establishment of importations even on a much larger scale than the present. There are many sound economic reasons for this tendency.

Place of Foreign Crudes

The recent development of Seminole is taken to be typical of American crude oil development in recent years. This development has embodied the discovery of a number of big oil reservoirs underground which have been subsequently developed on a keenly competitive basis. The oil from these pools has had to be stored aboveground because of the lack of a current market, with the result that the aggregate of storage has been increased by several hundred million barrels. Meanwhile, the pools concerned have been practically drained and left to dwindle to a natural death, while operators have pushed forward to the new discoveries.

It is considered quite obvious that each of these flush pools has left the industry with approximately 50,000,000 bbls. additional oil which had to be stored as it did not have an immediate outlet, and this in turn has given domestic operators an additional charge on every barrel so produced, involved in carrying the oil in tanks. Not only has this meant economic waste, but also it indicates to many the possibility of a sudden and rapid decline in domestic production when the real fruits of the wasteful production methods are matured.

The development of the oil fields of both Venezuela and Colombia present a very different aspect from that pictured above. Generally speaking, it has embodied well-thought-out and only moderately competitive operation. The keynote has been a building up of gradually increasing and permanent production. Where American refiners, who must think of the crude oil supply in terms of future years, cannot see any great degree of permanency in the nature of the flush oil production in most domestic fields, they do see a fairly indefinite continuation of the sources being developed in the two South American countries now under discussion.

The fundamental trend of this latter development is toward low-cost production of crude oil, and American refiners regard this as the best guarantee of the continued growth of the oil industry. Everything depends, in their estimation, on the ability to produce the raw material at a lower cost than that from which substitutes for oil products can be obtained, such as oil shale or coal.

Elements in Cost

Elements determining the cost of crude petroleum to the refiner are mainly the cost of drilling, the cost of storing and the cost of transporting the crude oil. These costs have to be paid, in the end, by the refiner. American development in recent years has involved an excessive storage charge. This is being saved largely in the development of the Colombian and Venezuela oil industries, and places the development on a somewhat more sound foundation than that in the United States. The drilling and transportation elements are fairly well balanced, so far as individual operators are concerned, although, taken as a whole, the cost of drilling in the competitive flush fields of the United States is also excessive. Much of the excessive cost here is borne by a large number of individual operators.

Perhaps the natural advantage of both Colombia and Venezuela are also greater, so far as the recovery features are concerned. Here again, must be reckoned the value of only moderately competitive drilling, in as much as in both Colombia and Venezuela it is likely there would now be a huge stock of oil in tanks aboveground if keen drilling competition had been possible. However, the number of dry holes is relatively small in both Venezuela and Colombia, and the initial output of producers comparatively high.

The Lago Oil & Transport Co., operating in Venezuela with an average production of 40,000 bbls. daily, is said never to have drilled a dry hole. Many of the wells have been pinched in, but the initial output has ranged from 1,000 bbls. to around 10,000 bbls. a day per well. In Colombia, out of about 154 wells drilled to date on the only producing concession, only 12 were dry holes, and the initial output per well is said to have averaged over 1,000 bbls. per day.

Able to develop their concessions in a pre-determined and well-thought-out manner, the owners of these big concessions in Colombia and Venezuela regard them as almost a permanent source of raw material for their refineries. The amount of oil stored aboveground is very much closer to actual current economic requirements than is the case in the fields of the United States. The net result apparently is a fairly reliable source of low-cost crude petroleum.

Lesson From Foreign Development

Strange to say, the American oil industry concerned intrinsically in searching for oil and producing it has nothing to fear from possible competition offered by crude importations. The heavy investment in foreign development on the part of leading American oil interests, in the first place, is positive testimony to their belief that American flush production cannot be maintained in excess of consumption. Secondly, the grades of oil produced in the United States are for the most part different from those produced abroad. Seminole output may have broken the crude price structure, but certainly the value of a crude such as this cannot be underestimated, when the current and potential demand for gasoline and lubricants is considered. Whatever may be said, neither Venezuelan nor Colombian crude oil can be looked upon as competing with high-grade Mid-Continent crude oil.

Furthermore, it is significant that foreign development is reaching a peak just at the present time, with American refiners importing it in the face of record domestic crude oil production. This is taken to indicate the present overproduction is not so bad as it is supposed, apart from its purely local aspect.

The idea should be impressed on the American oil industry, in the opinion of some leaders, that there now exists a sizeable foreign operating branch and that this branch will have something to do with the future policy of many leading American companies as to domestic production and prices. This does not mean that foreign crude is to be substituted in American coastal refineries in preference to American crude. It does mean, however, that American producers must take cognizance of the reasons which impelled some of the leading oil companies to carry on an intensive foreign development program in the face of California, Powell, Smackover, the Panhandle, Seminole and the rest of the big flush fields of the United States of recent years.

It can be pointed to as a fact that actual importations of Venezuelan and Colombian crude have not reached a level at which the domestic price structure could have been adversely affected. In the first place, the importations from South America, including a comparatively small quantity also from Trinidad and Peru, have not even fully offset the recent decline in imports from Mexico.

Can Increase Imports

However, some American oil companies, such as Standard of New Jersey, Standard of Indiana and Gulf Oil Corp., are in a position to increase their importations of South American oil.

On July 1, or thereabouts, the Colombian pipe line capacity from the DeMares concession to the seacoast is expected to be doubled as a result of the completion of a new line. This will permit an increase of 25,000 bbls. daily in exports. The concession is controlled by the Standard Oil Co. of New Jersey (through subsidiaries). The Standard of Indiana controls, indirectly, the Lago Oil & Transport Co., operating in Venezuela. This company has recently increased its crude oil production materially, and the exportation of additional oil only awaits transportation facilities. The Gulf Oil Corp. is said to be in a position, and to be contemplatng, doubling its importations from Venezuela. Its Bayonne refinery runs on this oil, and a new plant for

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MAGNOLIA CUTS CRUDE PRICE, BUT NO ONE MEETS NEW SCHEDULE

The Magnolia Petroleum Co. on Thursday, April 7, announced a reduction in the price it would pay for crude in fields in Kansas, Oklahoma and Texas where it purchased on a gravity basis. For oil below 33 degrees in gravity it announced a flat price of $1.05; for oil of 33 degrees, $1.07, adding 2 cents to the price for each full degree upward to and including 52 degrees and above, which was placed at $1.45.

The Magnolia company also reduced Luling, Tex., crude to $1 per barrel, a cut of 5 cents. This cut was met by the Grayburg Oil Co. The Magnolia has been paying $1 per barrel in the Mirando, Texas, Field and the Texpata company met this price following the Magnolia's cut in other fields.

The Magnolia's reduction in price in Kansas, Oklahoma and Texas where it buys on a gravity basis was not met by any of the major companies up to late Tuesday, April 12. When informed by The Oil and Gas Journal last Wednesday evening that the Magnolia had announced it would cut crude the following morning several heads of companies which purchase oil on a large scale expressed no surprise. Had any one of the other purchasers met the price the cut would undoubtedly have become general in the territory affected, but there seemed no inclination on the part of any other purchaser to reduce the prevailing prices.

The Magnolia's price cuts were as follows: For crude oil below 28 degrees, 5 cents; 28 degrees, 7 cents; 29 degrees, 9 cents; 30 degrees, 11 cents; 31 degrees, 13 cents; 32 degrees, 15 cents, and on all crude above 32.9 degrees 15 cents.

South Oklahoma Least Affected

The Magnolia Petroleum Co.'s action in putting a flat price of $1.05 on all oil it purchases below 33 gravity affects its customers in southern Oklahoma, where much of the production is below 33 degrees and as low as 24 degrees.

Compared with the Magnolia company's prices early last November before the Humble Oil & Refining Co. and Carter Oil Co. made the first of the series of reductions, crude prices have suffered very severely and the higher the gravity of the crude the deeper has been the cut.

The average gravity of the oil bought by the Magnolia in Kansas, Oklahoma and Texas is not definitely known. The average gravity of all the crude in the territory is no less than 39 degrees and on this basis the average crude cut in the territory, based on the Magnolia's prices, is $1.34 per barrel. The Magnolia had posted the same schedule as the Prairie and other companies, excepting for oil below 28 degrees, but it buys little crude above 43 gravity so the fact that 52 gravity crude has been cut $2.12 in the past five months and 45 gravity crude has been reduced $1.70 is all on paper so far as the Magnolia is concerned.

Effect in Certain Big Pools

Its Burbank price has been cut at least $1.22 per barrel since last November. It is the largest shipper of oil out of the Cushing Field, its production and purchases in that field running around 5,700 bbls. a day. Its price reductions

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Many Problems Confront Oil Producer

Seas of Water and Mud, Called Roads, Hamper Seminole Operations. Lack Storage and Pipe Lines at Seal Beach

By J. L. Dwyer

All the world looks black to a blind man, and numerous writers of petroleum activities have pondered about the number of readers who have any coherent idea of the real meaning of the sentence, "Bad roads have hampered field activities." In view of this, the pictures accompanying this story were taken and are reproduced. The majority of petroleum executives who will observe them are fully conversant with oil-field roads, but numerous readers will possibly have their first view of the impossible and impassible road conditions which are almost always experienced in the drilling and development of an oil field of huge proportions; and the pictures will also tend to refresh the memories of those executives who may occasionally become impatient when first-hand reports from the field are not in the main office by 10 a. m.

The pictures show actual conditions in the Seminole Field; and they show the lack of roads rather than the roads. Four horses have been drowned in one exceptionally bad mudhole on a Seminole road, and every possible precaution must be taken by the scouts and field men who make the rounds every day. Regardless of whether they swim, walk, ride a horse or drive their pride of Detroit, the rounds must be made and information about progress and production must be reported to the main office of their company.

Located in Lowland

When Seminole first assumed proportions of a great field in November last year, the main body of production was situated in a lowland to the east of the city of Seminole. The picture shows a mixed flotilla trying to make the grade from the city to the field, which may be seen in the distance.

After viewing these pictures, it is not difficult to visualize the situation, and those who are unfamiliar with construction may venture guesses as to the speed with which heavy drilling and producing equipment may be transported into action in the battle of Seminole. The wagons and trucks pictured are mostly empty, and still have difficulty in making the trips. Picture the delight of moving trucks loaded with large compressors or gas engines. Imagine the pleasures of endeavoring to transport a large Diesel engine for a pipe line station, or a motor. Fancy the joys of conveying truck after truck of casing and line pipe through such spots as the pictures show; and then remember that all the roads are not like those pictured; some are so bad that it was impossible to get out of the car to photograph them.

The Seminole Field's development, and also the serious congestion which occurred last winter, were both affected by the unfavorable transportation conditions. The development was hampered, but not as much as the pipe liners were bothered. The bad roads for the most part were experienced after drilling had started, and additional rainfalls failed to stop wells which were started. Not so in the case of the pipe liners, however, for their efforts were not required until after several wells had been completed. During the time the rains were getting in their worst work, the drilling continued, but the pipe line

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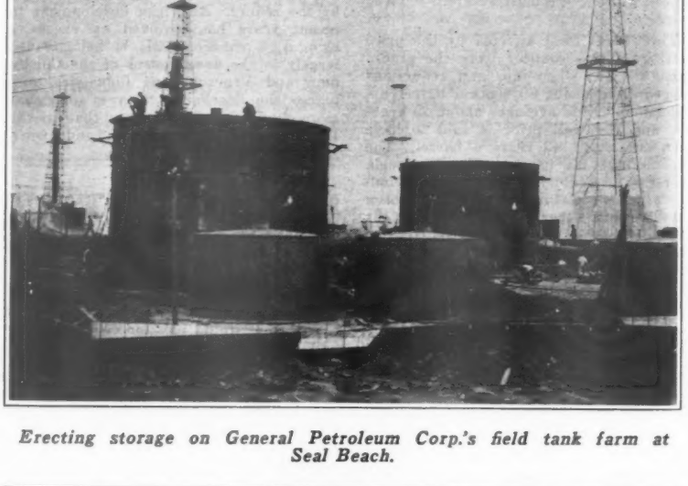
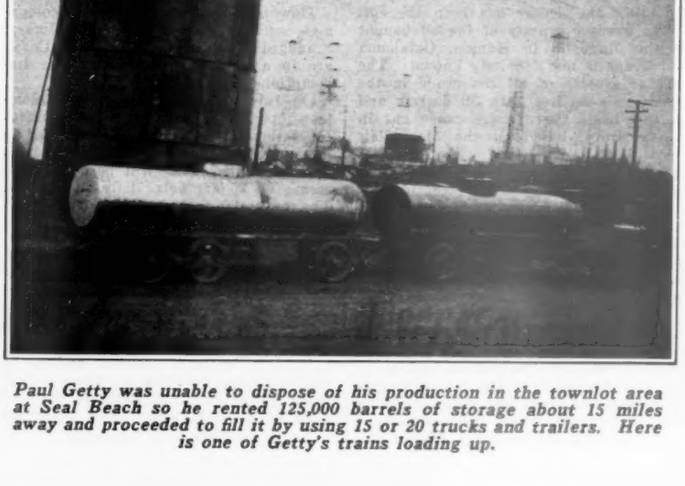
The road(?) to the East Field at Seminole.

Business was good for men with teams on the road going south to the Bowlegs Pool at Seminole.



Erecting storage on General Petroleum Corp.'s field tank farm at Seal Beach.



Paul Getty was unable to dispose of his production in the townlot area at Seal Beach so he rented 125,000 barrels of storage about 15 miles away and proceeded to fill it by using 15 or 20 trucks and trailers. Here is one of Getty's trains loading up.

The Oil and Gas Journal's man played safe at Seminole and procured a team of trusty mules before he started across the flood.

Trend of Measurement of Natural Gas

From Humble Beginning, This Phase Has Developed Into Important Factor and Is Improving Rapidly

By E. A. Clark*
Oklahoma Natural Gas Corporation, Tulsa

In the presentation of this subject it is not my intention to go to England and start with Clegg, the first gas engineer, nor do I intend to dwell on the fact that George Washington in 1775 set aside by will a park in West Virginia to conserve that natural gas which was escaping from a burning spring. Nor is it necessary to tell how Fredonia, N. Y., was lighted with natural gas in honor of Marquis de Lafayette.

You will probably all know that at one time every town and borough in Pennsylvania had an order and regulation prohibiting gas as a lighting and heating fuel. It was supposed to be the device of the devil's own creation and one of the agencies to be used on the last day in the consumption of the earth and the creatures thereon by fire. In 1873, Col. Nelson Faires drilled the first small gas well in the Mid-Continent area near Iola, Kans.

It was not until 1888 that a large scale plant for the manufacturing of natural gas meters was organized by Calvin N. Payne at Erie, Pa.

The first annual meeting of the Natural Gas Association of America was held in Kansas City June 12 and 13, 1906, and the second paper given was on "Gas Meters and Volume and Pressure Recording Gauges," by A. G. Holmes.

Work on Orifice Meter

It was in 1911 that H. C. Cooper of the Hope Natural Gas Co. began working on an orifice meter at the Wilkinsburg, Pa., measuring station. Walter Abbe and J. H. Satterwhite drew up a design for a differential and pressure gauge, commonly known as the "bomb-shell" type. This gauge, together with the coefficients developed at the Wilkinsburg measuring station, were first used in an installation on the Hope Natural Gas Co.'s lines in West Virginia in November, 1911.

The first mercury type differential gauge was put on the market the latter part of 1912. Other types and designs of gauges followed these and a casual observer can see today we have materially progressed in the development of the mercury float differential gauges. This does not mean the positive displacement meters have not developed. Orifice meters are now generally used on large capacities, and the former on small deliveries.

Tin and Iron Case Meters

For domestic service many companies still use the tin meter which was used so satisfactorily in the measurement of artificial gas prior to the rapid increase in natural gas consumption. The iron case meter has increased in popularity from year to year. The use of the curb box meter is attracting considerable attention. In brief, the curb box meter cuts down the loss and unaccounted-for gas due to elimination of leaks in the service line from the curb to the residence; it terminates the company's liability at the curb; a more even temperature of gas is maintained and it reduces the necessity for rereading because of inability to get to the meter. It absolutely eliminates stuffing box leaks and the loss of meters by fire.

Better methods and more convenient types of apparatus are gradually being developed and the men are taking more precaution in the operation of their meters, thanks to such valuable instruction as they receive from meter schools meetings of the gas divisions and conservation schools of the utilities associations.

Too much time no doubt is often given to the correction of .1 or .2 of an inch variation in the differential of the orifice of the meter when more attention should be given to the pressure record.

On larger stations a mercury column may be installed and the pressure checked each day. The mercury column shou'd be properly corrected for temperature. In this way a calibration of the pressure spring can be made whenever desired.

The Time Element

The time element in orifice meter measurement is another factor being watched closer than ever before. Not over two months ago I was told of a chart changer in charge of several orifice meters in the field who did not even carry a watch. Time on an orifice meter is as important as the pressure or differential. It is important to keep the discs of the orifice meter clean and sharp, especially on the cutting edges. Needless to say, discs must be centered on the orifice flange. A deposit such as salt which decreases the size of the orifice increases the differential, but it is surprising what a small amount of deposit on the upstream side of the disc will cause the differential to decrease. A tallow candle rubbed around the cutting edge of the orifice will materially decrease the differential.

To eliminate dirt gathering upon orifice discs, dust filters and scrubbers have been developed. In the last few years various types have been designed, but the ones which pass the gas through an oil bath seem to be the most popular.

Equipment in general is being improved rapidly and the manufacturers have realized that too much care cannot be placed upon the construction of the meter and recording gauges.

It is surprising to note that the paper from which charts are being made expands and contracts materially with the change of humidity. The meter manufacturers are taking care of this by making charts out of paper which has the least amount of expansion with changes of humidity.

Data on the Chart

It is important that full information be placed upon the back of the chart before it leaves the field. Most companies have some form of station number which identifies the setting from which the chart came and simplifies making the office records. Usually a printed form is stamped on the back of the chart which has a blank space for the station number, disc number, gauge number, the time of changing the chart and other information which may be of value to the chart clerk. In many cases it is advantageous to figure the charts in the field and check them in the general office. This gives quicker action upon a meter which is out of order and the deliveries from the wells can be better regulated to the desired percentage of the open flow. In the calculation of charts there has been considerable improvement and curtailing of unnecessary work. It is only necessary here to mention such items as setting up of the chart which shows the number of hours in which gas is to be figured passing. We have found good practice, without sacrificing accuracy, to figure coefficients, and use only one decimal place in the calculation of the delivery, one decimal point being used in the extension, three decimal points being used in gravity and the differential being figured to tenths of an inch up to 30 inches. Volume and pressure meter charts are figured on weighted average where it is necessary.

A little over five years ago our company started to use auxiliary control on the low pressure regulators. This has been rapidly followed up until at the present time most of the charts taken off of the domestic pressure regulators show almost a perfect circle. The Empire companies, under the jurisdiction of Mr. Hancock, were pioneers in this work.

Correct Regulation

Upon first thought you will probably wonder why I mentioned regulation in connection with gas measurement. We have found that correct regulation is one of the essentials in measuring gas properly. If the intermediate and domestic pressures are properly regulated the only variable you have in orifice meter measurement is the differential. The differential is then an effective measurement of the variation in the load. The intermediate and domestic pressures are kept at a point such that it is not necessary to have the usual fluctuations in load to build up a depleted line pressure and a decrease in the load to reduce excess in pressure. With proper regulation smaller discs can be used in the orifice meters, lower line pressure can be carried in the field as well as on the intermediate and domestic lines.

After the success on domestic pressure by the use of auxiliary control and improved supersensitive regulators, a study was started upon intermediate pressures. Tests were run upon different types of regulators and curves plotted showing the valve travel plotted against pressure in pounds. The test was run with a rising and falling stem. The difference in the two curves shows the fluctuation in pressure to open and close the valves. Regulators took from 5 to 30 pounds difference in pressure to raise and lower the valve stem. The area between these curves gives a measure of the friction in the regulator. Some regulators showed as much as six pounds variation caused by friction. It was also discovered that there was considerable change in the effective area of the diaphragm from the closed to open position of the valves. Considerable doubt has been expressed by many engineers as to the extent of this change in effective area. The effective area changed in one regulator, with a 7-inch head, from 14 square inches to 22 square inches. This change in effective area means to open the regulator gradually, requires the addition of weights, as the amount of gas passing the valves increases. Of course, the weights must be removed as soon as the load is reduced or the pressure will materially increase on the outlet side before the regulator will close.

This change in effective area was entirely overcome on one type of regulator by using an auxiliary regulator, commonly used on oxygen tanks. The weights and levers were removed and the inlet of the oxygen regulator connected to the line on the high pressure side. The outlet was connected to the diaphragm case and this pressure from the oxygen regulator took the place of the lever and weights. With this auxiliary control one-fourth of a pound pressure would open and close the valves when no gas was passing. This, I believe, conclusively shows that this variation in pressure, shown on the curves, was due to a change in the effective area of the diaphragm.

Better Without Hubs

Various types of hubs were tried on the valves. What I have called a hub is the extension placed upon the upper valve by the manufacturers and was intended to keep the valves from chatter-

(Continued on Page 94)

*Read before the Southwest Division Natural Gas Association of America in Dallas April 12.

GAS MEN FROM FIVE STATES GATHER IN DALLAS TO DISCUSS PROBLEMS

By James H. Dameron
Staff Correspondent

DALLAS, Tex., Apr. 12.—About 200 members of the Natural Gas Association of America were here today to attend the opening session of the second quarterly meeting of the southwest division of the association. The meeting will close tomorrow afternoon with reports from the standing committees.

With the opening of the meeting, a movement was soon under way to bring the 1928 national convention of the association to Dallas. The 1927 convention will be held in Cincinnati May 9 to 12. However, the movement to make Dallas the 1928 convention city was not brought before the meeting, although some members expect to act during the closing hours. N. C McGowen, president of the Palmer Corp. of Shreveport, La., and vice president of the Natural Gas Association of America and chairman of the southwest division, opened the meeting at the Adolphus Hotel. Mr. McGowen expressed his gratification at the attendance and predicted success for the southwest division. He explained the object of the quarterly meetings was to bring the gas men from the five states embraced in the division—Oklahoma, Kansas, Texas, Louisiana and Arkansas—together for discussion of their local problems. The meetings also furnish a medium for the exchange of ideas as well as give the gas men an opportunity to become better acquainted. The meetings, he said, would not only be a benefit to the gas men but to the public as well.

McQuaid Reports Progress

George McQuaid, secretary of the southwest division, said great progress had been made since the division was formed less than a year ago. Membership has grown rapidly and is expected to take another big jump after the current meeting. Moreover, new members are taking a keen interest in the affairs of the association and are working towards its success.

J. W. Everman, supervisor of public utilities of Dallas, made the address of welcome. He pointed to the co-operation of utility companies and his department and explained how the utility companies worked in harmony. E. R. Brown, president of the Magnolia Petroleum Co., responded and urged the gas men to greater co-operation in solving their local problems as well as national problems. Mr. Brown said the gas business had made an amazing growth in a short time and had grown to be a $750,000,000 industry. He urged the gas men to conduct an educational campaign to acquaint the public with the problems of utility companies and especially the problems of natural gas and gasoline men.

E. A. Clark of the Oklahoma Natural

(Continued on Page 150)

Arbitration in Marketing Disputes

Selection of Official Inspectors by Agreement of Trade Suggested to A. O. M. A. Convention

By Carl Beroth*
President, Acme Petroleum Co.

There has been considerable discussion among refiners, marketers and jobbers for the past several years regarding the subject of shortages, outages and claims on tank car shipments. It has been suggested that a great deal of difficulty could be eliminated if refiners would work out some system whereby a special inspector would check each and every car and seal it before it leaves the refinery. Such inspector should be a graduate of some school which has taught him the specifications of various pertoleum products and not be an ordinary employe on a loading rack. Refinery should furnish him with a slip showing what specifications apply to each car—for instance, on fuel oils or gas oils:

Baume Gravity.
Flash Point.
Color.
Approximate Cold Test.

In the case of lubricating oils, it would be necessary to have additional specifications and possibly have a sample taken from each car into a laboratory to make whatever tests were necessary. A copy of such inspector's report could then be sent into the office and if refinery so desired, it could be mailed to the customer and the inspector would seal the car after it has been O. K.'d, so that there would be no chance of tampering with the contents. Consignee would note inspector's seal number and mark, and when car is received, he would notify shipper promptly of any difference between inspector's report and condition of car at destination.

Trade to Name Inspector

It has also been suggested that at each of the large jobbing centers there should be some official inspector appointed by refiners, marketers and jobbers, or at the request of some State Petroleum Association. Let us take, for instance, such points as Minneapolis, Chicago, St. Louis, Cleveland and Kansas City. The inspectors should have at least a college education so as to know the different petroleum products and be able to run a test on various products according to Bureau of Mines standards, or American Petroleum Institute standards, or whatever standards were general for the grade of petroleum products shipped.

Let us suppose that a consignee in Mankato, Minn., made a report that a car of gasoline was not what he bought and that it was short, as well as off color. This complaint would be wired to the refinery or marketer who had sold the car and he in turn would wire it to the official inspector at Minneapolis, Minn., or better still, after the system were generally known the jobber could wire direct to the inspector if it was desirable to save time and expense. When the inspector received the report he would either go himself to Mankato or send some messenger to that city to get a sample out of the car and have it sealed in the presence of the jobber making the complaint and initialed by both the sample taker and the jobber. This sample would then be forwarded immediately to the official inspector at Minneapolis and within a few hours after receipt he would determine whether or not the complaint was justified. If it was, then the shipper of the oil would pay for the cost of the inspection which would be say $5 or $10 per day, plus the actual travelling expenses in getting the sample. If, on the other hand, the consignee was wrong and insisted on an analysis being made, and this was found to be according to terms of sale, the consignee would pay the inspector's fees and incidental charges.

*Before American Oil Men's Association Convention, Chicago, April 14.

It has been suggested that if the cost of maintaining inspection offices were divided among the members of the Western Petroleum Refiners Association there would be a big saving as compared to the number of claims which the members of this association are constantly allowing. The expense of such offices, if prorated among a number of refiners, would be a very small item.

The advantages of this proposition would be that after an inspector had become thoroughly familiar with different complaints and methods of handling, he should be able to work out a system which would help the jobber to determine exactly the standard methods of making tests. There are many small jobbers who have not complete facilities and are honestly making complaints which they otherwise would not make if they understood the standard methods of analyses thoroughly. It would soon mean the elimination of the consignee who persistently makes unfair claims, because the official inspector would make complete reports to shippers which reports could be made out in several duplicates and sent to every member of the Western Refiners Association. On the other hand, if a refiner were persistently shipping oils up to specifications, it would soon become known among the jobbers that this was being practiced and it would also be known to refiners, who through their association could arrange for a correction.

The big trouble so far has been that most complaints come direct to the sales manager of the refinery and he has nothing to do with the actual loading of the cars at the refinery. He naturally takes it for granted that all of his employes are honest and know what they are doing and this, of course, is very commendable. However, human beings will make mistakes as long as they are on earth and the refinery employes are no exceptions.

Examples of Disputes

In a recent case, a car of distillate was purchased from a very large refinery. When the car arrived at Wisconsin destination which was during the cold weather, the jobber insisted that it contained 13 inches of heavy material in the bottom. This was wired to the refinery who in turn replied that it was impossible as all distillate was loaded from only one tank and there could be no such condition as jobber reported. The car was then again inspected by two disinterested parties—one a city chemist and the other an oil man who had nothing to do with the car. These two parties found the same conditions as previously stated. Refiner then suggested disposing of the car in the best possible manner, but did not believe there was anything wrong with the oil. The car was reshipped and unloaded overhead and 13 inches of real heavy sediment was found in the bottom of car and had to be shoveled out. Refiner disclaimed responsibility and before the matter was settled, it was necessary to refer it to three arbitrators—one a refiner and two others being secretaries of trade associations. All of these arbitrators found that the refiner was wrong, but it took about nine months to get this claim settled.

In another case, a car of gasoline was shipped to Chicago and consignee reported heavy yellow fluid in the bottom of car. Refiner was notified and stated that his check and sample showed nothing but navy specification gasoline loaded and car perfectly clean before loading. Samples were obtained from top, center and bottom of car and sent to an independent laboratory in Chicago and their determination showed that the bottom settling was acid solution from agitator. A sample was sent to refiner and he then acknowledged the mistake in loading even though refinery report showed everything O. K. This proposition took several wires, telephone calls and a few days demurrage before it was settled.

In another instance, gasoline was shipped as being good odor and when it arrived at destination, serious complaints were made. In one city the health department threatened to bring suit against the marketer for shipping this kind of gasoline, claiming that a number of the city employes became severely ill after handling the gasoline. Numerous complaints were made regarding people becoming ill from the fumes arising in the use of the gasoline in their automobiles. Refiner insisted that the odor was sweet and O. K. However, after at least one-half dozen complaints and samples obtained at considerable expense, the sales manager, we understand, was able to convince refinery superintendent that it was not the right kind of gasoline and that complaints were justified and refiner made proper allowances.

To End Trouble

Now the point we want to bring out is this—in each one of these cases if there had been an official inspector at Chicago, the complaints could have been settled in a much shorter time than they were and at considerably less expense to all parties concerned. In case of dissatisfaction with official inspector's report of analysis the matter could be submitted to the State University or to some of the large testing laboratories in various large cities and states. The system would give refiners an independent check on their own products and would save them considerable time and expense involved in present methods of handling. It would help to educate the jobber or the manufacturer who is not thoroughly posted on up-to-date methods of handling claims on oils or other petroleum products. It would eliminate disagreeable correspondence between the wholesale carload distributor and the refiner as well as jobber. It should be remembered that the wholesale carload distributor rarely, if ever, sees the oil that is shipped and it is much easier for him not to make a complaint than to make one. It would quickly determine whether or not products are resold on exactly the same specifications as purchased and disclose any bad practice or unfair competition. It would instill in the jobber and the public the feeling that independent of the refiner, the wholesale distributor and the jobber, there is an unprejudiced umpire checking carefully oil specifications.

AMERICAN LEADERSHIP DOMINANT NOTE AT MEETING OF CHEMISTS

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

RICHMOND, Va., Apr. 12.—American leadership in the petroleum and natural gas industries was the dominant keynote at the seventy-third meeting of the American Chemical Society that assembled here today. The first to use petroleum in its industrial life, chemists of the United States were not as early in attacking technical problems relating to the most widespread use of this natural product as were some of the organized chemists abroad. Now they have entered into every phase of scientific research and their accomplishments have placed them at the head of such technical workers of the world.

All problems for the best utilization of mineral oil and for the extension of its uses are being attacked with success that is directing the attention of the industrial world to these achievements, essential in all lines of mechanical endeavor and professional advancement.

There were 295 papers prepared to be read before the society's 15 divisional meetings. Twenty of these papers relate to petroleum chemistry and thirteen to gas and fuel chemistry.

The state of Virginia extended a cordial welcome to the scientists and Mayor J. Fulmer Bright offered the hospitality of the city to the 1,000 delegates. Dr. George Rosengarten, president of the society, responded with fitting acknowledgment for the efforts made by the commonwealth and its historic capital to promote the success of the meeting.

Papers on Petroleum

The papers presented at the meetings contained data that emphasize the high degree of specialization being carried out in the laboratory and field in placing refining on a scientific basis. Many subjects were covered and many papers were read on the extensive studies being made of the sulphur bodies in petroleum and the factors affecting the yield of wax from petroleum. Another subject well covered was the effect of the use of different lubricating oils on the deposition of carbon in the internal combustion engine.

This work was done and the results were presented by C. L. Livingstone, S. P. Marley and W. A. Gruse. In studies already published, the authors have shown that it is possible to operate a test engine under such control that results on carbon deposits may be duplicated. They have further shown that differences in carbon depositing tendency of engine oils made from crude of different types, are real and significant. The previous work established a direct relation between the carbon depositing tendency of oils and their Conradson carbon residue value.

In the present work oils of viscosity exceeding 60 seconds Saybolt at 210 degrees Fahrenheit were studied under conditions simulating those prevailing in the engines of trucks and motor coaches.

The lubricating oils of low carbon residue value give much less carbon deposits in the engine than do those of high carbon residue value.

Antiknock Properties

Another popular subject was covered by the paper prepared by C. K. Reiman who discussed the method of measuring the antiknock properties of motor fuel used in the laboratories of Arthur D. Little Inc. A standardized gasoline of known antiknock value, based on a definite blend with aniline, is used for comparison in the testing of unknown samples and it was found that when but little difference existed in the antiknock values of the standard fuel and the unknown that the same results are obtained whether the comparison is made at high

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Newton Economy

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Newton Absorption Plants operate continuously at a profit because their flexibility enables their owners to operate with highest recovery, and at lowest cost.

That is the story in a nutshell of Newton Process' success. Refiners and natural gasoline manufacturers find ample reason for investing in Newton Plants after comparative tests involving ordinary plants and "profit process" plants. It is hard to believe that there is so much difference between ordinary recovery systems and Newton; yet there is an ACTUAL difference, as investigators have learned, and the difference they have found has all been in Newton's favor The facts about Newton efficiency, economy, and low cost in operation will be amazing; but your investigation will prove decidedly profitable when the time comes for you to buy a gasoline absorption plant, or to make additions to your present plant.

A Newton Process representative can give you the full details concerning plant operation. Glance at the advantages listed below; where else, except in Newton Absorbers, can you find them all?

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MEMBER AUDIT BUREAU OF CIRCULATIONS

WHAT IS HAPPENING TO GASOLINE

Overproduction of crude is not what is the matter with the gasoline market.

It is overproduction of gasoline.

Getting this straight will help to a clearer understanding of what has happened and of the present situation and future course of the business.

It is true that what hurts one branch of the industry reacts upon another but just because raw material is cheap is no reason for a manufacturer breaking his own prices by making more than can be sold at a reasonable profit.

The present situation in the refining industry can be traced back to its origin by a few simple comparisons. The Bureau of Mines figures for the first two months of this year contrasted with the same two months of 1926 tell the story.

The domestic crude run to stills in January a year ago amounted to 58,652,000 barrels, which with 2,700,000 barrels imported made a total of 61,352,000 barrels.

In February, 1926, the domestic crude run was 53,352,000 barrels and imports 3,223,000, a total of 56,575,000 barrels.

But in January this year the total crude run to stills was 69,948,000 barrels and in February 63,351,000 barrels.

In other words, in the first two months of last year the crude run to stills totaled 117,927,000 barrels and in the first two months of this year 133,299,000 barrels.

That is the increase in raw material. Now look at the manufacture of gasoline.

In January last year the gasoline produced totaled 23,028,000 barrels and in February 21,259,000 barrels, a total of 44,287,000 barrels, which was a gasoline recovery of 37.6 per cent from the crude run.

In January of this year the gasoline produced totaled 27,960,000 barrels and in February 25,024,000 barrels, a total of 52,984,000 barrels, which was a gasoline recovery from the larger amount of crude run of 39.7 per cent.

That is to say there was an increase of 2.1 per cent in recovery of gasoline from each barrel of crude in the first two months of this year over the same period of last year.

Compare the production from cracking and it will be seen where most of this increase came from.

In January, 1926, there was produced by cracking 6,819,000 barrels of gasoline and in February 6,339,000 barrels, a total of 13,158,000 barrels.

In January this year the gasoline produced by cracking mounted 7,979,000 barrels and in February 8,874,000 barrels, a total of 16,853,000 barrels.

This was an increase in gasoline produced by cracking of more than 25 per cent over the same period a year before.

The actual increase was 3,695,000 barrels. Keep this increase from cracking in mind because it will be referred to later.

Turn now to the figures on consumption of gasoline in the two periods.

In January last year the domestic consumption was 17,582,000 barrels and in January this year 17,888,000 barrels, a remarkably small gain, largely due to the weather, but even if January, 1927, consumption did not come up to expectations such periods are to be expected and do not materially affect the general conclusions.

In February last year the domestic consumption was 15,814,000 barrels and in February last 18,240,000 barrels, a normal gain.

The total domestic gasoline consumption for the two months in 1926 was 33,396,000 barrels and in 1927 it was 36,128,000 barrels.

This was an increase in domestic consumption of 2,732,000 barrels.

But to understand the situation thoroughly the figures of gasoline exported must also be reviewed.

In January, 1926, they were 3,361,000 barrels and in February, that year, 3,245,000 barrels, a total of 6,606,000 barrels exported.

In January this year they were 3,557,000 barrels and in February 3,544,000 barrels, a total of 7,101,000 barrels exported.

That is, the gasoline exported in the first two months of this year was 495,000 barrels more than a year ago in the same months, a really good showing considering how exports increased in 1926.

But the increase in domestic consumption and exports of gasoline amounted to only 3,227,000 barrels and looking back to the increase in production by cracking, 3,695,000 barrels, it is seen that the increased recovery by cracking alone would have taken care of the increase in consumption, both domestic and exported, and have put 468,000 barrels in storage, which in all conscience would have been all that was needed in the way of surplus, considering the stocks on hand.

But this is not all. Natural gasoline also played a part. The natural gasoline used at refineries, about 65 per cent of the total manufactured, was also greater in the first two months of this year, amounting to 4,725,000 barrels against 3,872,000 barrels in January and February of 1926. This was an increase of 853,000 barrels or almost double the increase in the total gasoline exported for the same period. This 853,000 barrels added to the 468,000 barrels surplus produced by cracking in excess of the increase in domestic consumption and exports accounted for the addition of 1,321,000 barrels to storage.

But when we turn to the figures on stocks we find that in the first two months of this year there were 10,691,000 barrels of gasoline added to storage, that 15,372,000 more barrels of crude were run to stills with over 2 per cent more gasoline recovered from each barrel.

Thus while our domestic demand and exports increased 3,227,000 barrels that could have been more than taken care of by the increase in production by cracking alone we piled up 10,691,000 barrels in storage, or over 7,000,000 barrels more than our total increase in demand in the two months.

Nor was there need for any such addition to storage in view of the immense reserves in stock and the well-known fact that refinery capacity is amply able to take care of any conceivable demand.

In the Annual Refinery Number of The Oil and Gas Journal, March 10 last, it was predicted that "it will be possible to supply 85 per cent of the increase in gasoline consumption without running any more crude than last year."

The official figures prove that this was a conservative statement.

(Continued on Page 39)

DRESSER COUPLINGS

In the roughest territory and where conditions are most severe, pipe lines are laid with Dresser Couplings. Here they are stringing pipe up the slopes of Pikes Peak for a Dresser coupled high pressure water line. When finished it was like all other Dresser installations—a complete success.

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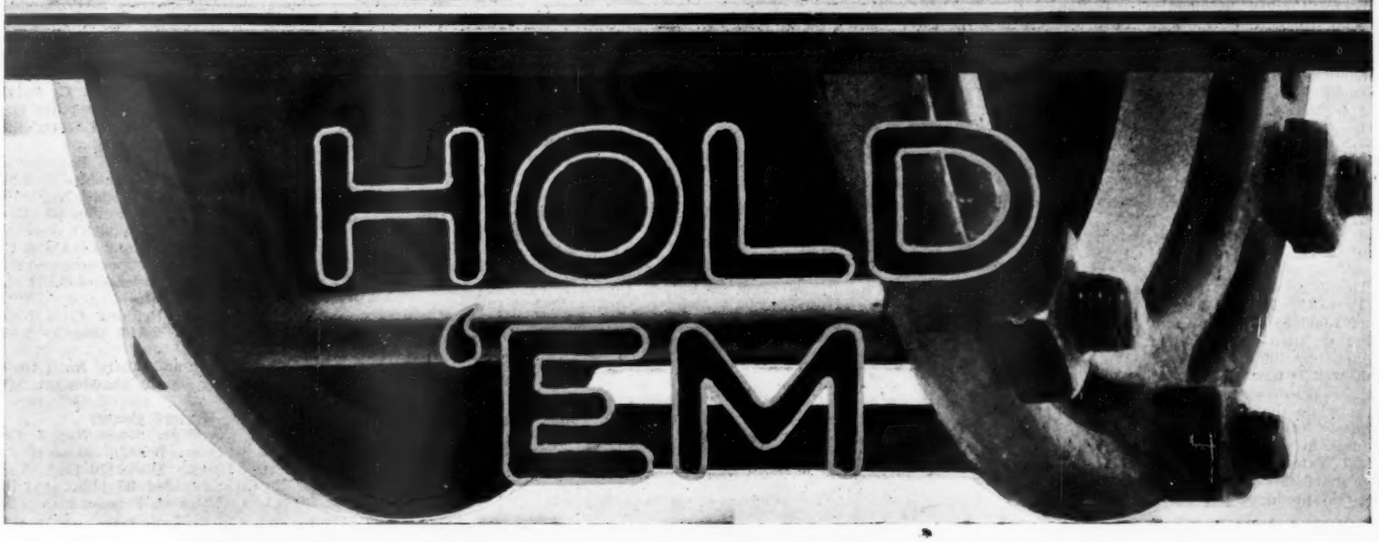

West Texas Increases 4,528 Barrels

Pecos, Winkler and Crane Counties Can Produce 100,000 Bbls. Full Capacity. Pipe Line Progress

By C. D. Lockwood
Staff Correspondent, North and West Texas

FORT WORTH, Tex., Apr. 11.—The Magnolia Petroleum Co.'s 15-cent cut in the price of crude effective April 7 occupied the attention of practically all operators in north and west Texas this week and they arose every morning resigned to the seemingly inevitable announcement that the other major buyers in the district had fallen in line. But the inevitable didn't come to pass and the psychological effect has been encouraging. Magnolia is now paying only $1.05 for all crude below 33 degrees in gravity, with a 2-cent spread for each degree above that, while all other purchasers are maintaining the schedule posted March 12 which is uniformly 15 cents higher than the Magnolia prices.

Pecos, Crane, Winkler and Young Counties all furnished news detrimental to the crude market, and the combined north and west Texas districts didn't help the situation to any extent when the production reports showed an increase of 2,288 bbls. All of this gain can be attributed to west Texas where the estimated output for the week ending April 9 was 96,130 bbls., the increase being 4,528 bbls. If the Pecos Winkler and Crane County wells were allowed to produce at full capacity, this district would soar far above the 100,000-bbl. mark. And this state of affairs may come about during the next couple of weeks since the Humble Pipe Line Co. is nearing completion on its 8-inch from McCamey to the Church-Fields Pool in Crane County, while the Illinois Pipe Line Co. has its 6-inch from McCamey to the Yates Pool in Pecos County more than half finished. The pump station is completed, three 55,000-bbl. tanks in the pool are full of oil and a fourth is being roofed. The four wells in this pool were opened up during the past week and made a record one-day production for Pecos County, the total output of the quartet amounting to 9,099 bbls.

Total daily production of north and west Texas last week was 261,465 bbls., compared with 259,177 bbls. the previous week. The Ranger district, including Brown, Shackelford and Stephens Counties, dropped off 1,725 bbls. while the Wichita Falls district decreased 500 bbls.

Young County Sensation

Young County provided a sensation Monday when R. C. Stovall's No. 5 fee, located 150 feet from the east line and 455 feet north of the Brazos River in Subdivision 30, came in flowing 250 bbls. an hour from pay topped at 3,896 feet and drilled to 3,900½ feet. This well is a location north of No. 1 which was completed Christmas day for 100 bbls. an hour at 3,882-85 feet and which has held up remarkably well for deep production in the South Bend district. This new well will call for others to the north and east as it extends production one location in a northerly direction.

Yates Pool

The discovery well in the Yates Pool of Pecos County was deepened this week from 1,005 feet to 1,035 feet, the result being a jump in production from approximately 400 bbls. to 95 bbls. an hour. This well is now numbered No. 1 Yates-A, the discovery lease being the "A" lease while the property in Section 61, formerly called "Account 2" has been changed to lease "B." Top of the pay in No. 1 Yates-A was 990 feet. The production of this well now compares with the two producers on either side of it just about exactly with their structural positions. No. 2, 535 feet west of it, is highest on the structure and was good for more than 6,000 bbls. daily while No. 3, lowest on the structure, was completed last week for 1,087 bbls. at total depth of 1,083 feet.

The Yates Pool has been defined on the northwest at a distance of about 6 miles by the Crosbie Drilling Co.'s No. 1 Yates in Section 70, Block 1. As reported in the list of wildcat wells last week, this test flowed sulphur water at 1,540-77 feet and is now plugging to abandon. Another disappointment was the Humble Oil & Refining Co. and Kirby Oil Co.'s No. 1 Rheinstrom, C NE SW, Section 30, Block 2, H. & T. C. Survey. With a surface elevation of 2,362 feet, it topped the salt at 830 feet and the lime at 2,150 feet. It found a small show of gas at 2,000 feet but picked up a hole full of sulphur water at 2,290 feet and at 2,370 feet the owners were preparing to plug and abandon the test.

Benedum & Trees' No. 1 J. C. Trees, in Section 30, Block 7, H. & G. N. Survey, Pecos County, was also flowing sulphur water at 3,115 feet while pulling the 6-inch to straightream. The California Co.'s No. 1 Union Land, in Section 8, Block 110, T. C. R. R. Survey, is another water well so far, having made 2 bailers of sulphur water per hour at 1,550 feet. Both of these tests are going ahead, however.

Concho Wildcat Showings

Concho County's interesting wildcat, Arkansas Fuel Co.'s No. 1 Hartgrove, in Section 49, Block 70, about 12 miles east of Paintrock, had a couple of new showings, the last one being good for 8 bbls. on the swab. This oil was found at 2,494-2,512 feet and there was 200,000 feet of gas with it. Drilling was progressing at 2,518 feet at latest report.

Deepening Winkler Well

In Winkler County, Southern Crude Oil Purchasing Co.'s No. 1 Hendricks-A, the discovery well, located in the SE cor. Section 42, Block B-5, has been deepened to 3,049 feet in pay topped at 2,997 feet, and it is to be carried still farther down. A string of 5-inch will be set and a deep test made at this location. The same company's No. 1 Hendricks-C, south offset to the discovery, has reached the top of the pay at 2,915 feet but the tools were lifted 8 feet off bottom and stuck there, causing a fishing job.

The Independent Oil & Gas Co.'s No. 1 Hendricks, west offset to the discovery, has been the source of much comment and speculation as the bit went down day after day for several weeks without encountering any salt, as reported by the driller. Now, however, it appears that this well has probably reached the top of the lime at 2,720 feet, which is just about the same depth as the lime in the discovery well. Reports on the top of the salt in this western country are unreliable in many cases due to the fact that the salt is often difficult for the driller to recognize. Unless he is very careful he may report it as any one of a number of other formations.

Showing in Ector

An interesting showing was reported in Ector County. The Exploration Co. resumed drilling in its No. 1 J. D. Slator, Section 10, Block 45, T-1-S, which was reported abandoned several weeks ago at 4,003 feet. Latest report showed it drilling ahead at 4,395 feet with a slight rainbow showing. This well is about 18 miles northwest of J. S. Cosden's No. 1 Connell-A, which is now pumping an average of 25 bbls. Cosden's No. 2 Connell-A, NW cor. NE. Section 13, Block B-16, Public School land, is drilling below 600 feet, and the rig is up for No. 3.

Crane County Well Revived

In Crane County, Simms Oil Co. and Atlantic Oil Producing Co. were all set to put the air to their No. 2 University-A, located in the SE cor. Section 39, Block 30, which was originally good for more than 8,000 bbls. daily but which went dead last week under 150 to 200 pounds back pressure. However, continuous swabbing brought the well back to a semblance of its former glory, the rejuvenated flow on April 7 gauging 120 bbls. an hour. The pay in this well is from 2,889 to 2,953 feet. There was no paraffin in the hole or any other cause for stoppage of the flow except the enormous back pressure.

Tidal Oil Co.'s No. 2 University-F, SE cor. NE, Section 46, Block 30, offsetting Eastland & Collett's No. 4, and Cromwell & Jones' No. 1, flowed 512 bbls. from pay topped at 2,820 feet and drilled to 2,860 feet but is to be drilled in farther and the initial production is expected to equal its offsets.

Humble Oil & Refining Co.'s No. 5 University, two locations east of the "gusher corner" in this pool, had 2,000 feet of oil in the hole at 2,835 feet and seems destined to give the pool a good extension. Simms and Atlantic's No. 4 University-A, one location north of No. 2, flowed 80 bbls. an hour at 2,905-60 feet. Their No. 1 University-C, south offset to Humble's No. 5 University, flowed 268 bbls. while drilling at 2,870 feet in pay topped at 2,804 feet. This well started flowing at 2,855 feet. Humble's No. 3 University, two locations north of their No. 2, flowed 65 bbls. the first hour while drilling at 2,960 feet in pay topped at 2,930 feet.

Church-Fields Extension

Gulf Production Co. extended the Church-Fields Pool northeastward a location with No. 4 State-Lasseter, SW cor. NW SW, Section 35, Block 30, which topped the pay at 3,012 feet and began flowing at 3,065 feet. It flowed 55 bbls. an hour at 3,076 feet and tanked 800 bbls. during the 24 hours ending last Friday morning. Nos. 3, 5 and 6, on this lease, are cementing or running 6-inch pipe around 2,900 to 2,950 feet, and No. 7 is drilling at 2,910 feet.

Eastern Jones County had both good and bad news this week. McLester and others' No. 1 Will Myatt, in Section 10, James Warfield Survey, was abandoned at 2,750 feet but the Stebbins Oil Co.'s No. 1 Higgs, in Section 30, W. T. Scott Survey, found a showing of oil at 1,600 feet. Marland Oil Co.'s No. 1 Larson, in Section 188, B. B. B. & C. Survey, was preparing to abandon at 2,519 feet.

WEST TEXAS WILDCATS

Week Ending April 9, 1927

ANDREWS COUNTY

Company, Farm and Location—	Remarks—
Calvin & Belt's No. 1 Ratliff & Bedford, C NE Sec. 16, Blk. A-54	Location.
J. S. Cosden's No. 1 Ratliff & Bedford, C SE Sec. 8, Blk. 73, Public School Land	Location.
Sartain Oil Co. et al's (was Deep Rock Oil Co.'s) No. 1 W. J. Harris, C SE Sec. 12, Blk. A-46, Public School Land	Digging slush pit.
C. B. McKennon's (was Neff et al's) No. 1 J. S. Means, C SE Sec. 12, Blk. A-35, Public School Land	Material on ground.
A. G. Carter & Zweifel's No. 1 Cowden, C SE Sec. 18, Blk. A-52, Public School Land Sur.	Top salt 1,375 ft.; drilling 1,515 ft.
Maer & Staniforth's No. 1 W. B. Taylor, C SE Sec. 15, Blk. A-42, Public School Land Sur.	Drilling 1,250 ft.

BORDEN COUNTY

J. L. Kennedy's No. 1 J. S. York, SE cor. Sec. 322, Blk. 97, H. & T. C. Sur.	Location.
Stivers et al's No. 1 Snodgrass, C NW Sec. 475, Blk. 97, H. & T. C. Sur.	Drilling 700 ft.

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 M. Siemons, SW cor. Sec. 78, Blk. M17, B. S. & F. Sur.	Rig.
Gulf Prod. Co.'s No. 1 Clements, SW cor. Sec. 27, Blk. M-10-A, Sealy & Morris Sur.	Total depth 1,505 ft.; underreaming 8-in. to 1,490 ft.; water sand 1,435-50 ft.; total depth 2,055 ft.; underreaming 8-in. 2,036 ft.
Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE Sec. 333, Blk. M-6, S. K. & K. Sur.	Shut down 510 ft. for casing.

COCHRAN COUNTY

J. C. Whicker's No. 1 G. C. Landon, 300 ft. N and 5,300 ft. E SW cor. League 154 Sherman Co. Sch. Ld.	Shut down 1,550 ft.

COKE COUNTY

Lipan Oil Co.'s No. 1 S. M. Conner	Drilling 500 ft.

CONCHO COUNTY

Harry Adams et al's No. 1 Price, C SW Sec. 78, Blk. 71, Alex Gregg Sur.	Spudded 20 ft.
Associated Pet. Co.'s No. 1 Sam Waring, SW cor. Jacob Getthardt Sur. No. 2,025	Fishing bit 2,300 ft.
Arkansas Fuel Co.'s No. 1 Hartgrove, SW cor. NW Sec. 49, Blk. 70, H. & T. C. Sur., 12 miles E of Paintrock	1,000,000 ft. gas 1,100-10 ft.; 4,500,000 ft. gas 1,142-47 ft.; small show oil in sandy lime 2,165 ft.; show oil 2,454-80 ft.; show oil and 200,000 ft. gas 2,494-2,512 ft.; bailed 8 bbls.; drilling 2,518 ft.
Mullins, Davis & Davenport's No. 1 William Hughes, C Sec. 6	Straightening hole 2,210 ft.
The Exploration Co.'s No. 1 Hartgrove, Blk. 240, J. Schouch Sur.	Shut down 1,680 ft.; underreaming.

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Howard County

Comet Petroleum Co.'s No. 1 Clay pumped 64 bbls. after a 30-quart shot at 1,810-30 feet. Dixie Oil Co.'s No. 1 H. R. Clay swabbed 35 bbls. at 1,765-1,963 feet. Magnolia Petroleum Co.'s No.

WEST TEXAS COMPLETIONS

Crane County

Cromwell & Jones' No. 1 University was completed for 2,200 bbls. at 2,809-2,900 feet. Church & Fields' No. 1 University, SE cor. SW, Section 39, Block 30, gauged 2,352 bbls. initial from pay at 2,842-81 feet. Eastland Oil Co. & Collett's No. 1 University was deepened from 2,907 to 2,956 feet and flowed 3,851 bbls. Top of pay is 2,446 feet.

Humble Oil & Refining Co.'s No. 4 University flowed 2,446 bbls. at 2,888-2,930 feet.

Ben D. Simon and others' No. 1 Brookfield was plugging to abandon at 3,525 feet.

7 Chalk-A had sand at 1,580-1,615 feet and after an 80-quart shot at 1,580-1,612 feet swabbed 35 bbls. No. 8 Chalk-A swabbed an average of 65 bbls. at 1,581-92 feet No. 1 Sloan Chalk swabbed 30 bbls., 15 per cent water, from sand at 1,558-70 feet; No. 2 Sarah Hyman made 40 bbls. at 1,600-25 feet.

Jones County

McLester and others' No. 1 Will Hyatt was abandoned as dry at 2,750 feet. Midwest Exploration Co.'s No. 3 Thornton swabbed 200 bbls. initial at 2,505-29 feet; No. 4 made 187 bbls. at 2,505-14 feet.

Mitchell County

Atlantic Oil Producing Co.'s No. 8 Womack was shot with 240 quarts from 2,970 to 3,030 feet, total depth 3,075 feet, and swabbed 35 bbls.

Pecos County

Crosbie Drilling Co.'s No. 1 Yates, Section 70, Block 1, was plugging to abandon at 1,577 feet. Texon Oil & Land Co.'s No. 1 Yates pumped 12 bbls. at 1,268-1,300 feet. Humble Oil & Refining Co.'s and Kirby Oil Co.'s No. 1 Rheinstrom was preparing to abandon at 2,370 feet.

Taylor County

Oil Operators Trust Co.'s No. 1 Haines & Hamilton was plugged as a failure at 2,604 feet.

Upton County

Roxana Petroleum Corp.'s No. 17 Bowen swabbed and flowed 500 bbls. the first 24 hours at 2,146-81 feet, and at latest report was making 422 bbls. This well had first oil at 2,058 feet. Texas Pacific Coal & Oil Co.'s No. 2 Lane-A was completed for 430 bbls., no water, at 2,043-73 feet. It made 700 bbls. initially, 5 per cent b. s. and water.

Winkler County

F. P. Zoch and others' No. 1 John Sealy was abandoned at 4,070 feet.

NORTH CENTRAL TEXAS
Estimated Production for Week Ending April 9, 1927

Ranger District—	This Week	Last Week
Brown County	24,948	25,115
Callahan County	4,925	5,450
Coleman County	3,375	1,515
Comanche County	1,607	1,510
Palo Pinto County	510	465
Ranger	7,480	8,125
Shackelford County	13,115	13,265
Stephens County	10,510	10,750
Total Ranger district	64,470	66,195
Wichita Falls District—		
Archer County	29,450	29,050
Baylor County	100	100
Clay County	685	715
Cooke County	1,590	1,580
Jack County	620	595
Montague County	13,235	13,505
Throckmorton County	1,690	1,530
Wichita County	31,350	31,580
Wilbarger County	13,580	13,920
Young County	8,565	8,805
Total Wichita Falls dist.	100,865	101,380
West Texas District—		
Big Lake Field	27,070	27,157
Crane County	33,005	28,976
Crockett County	1,460	1,586
Ector County	25	25
Garza County	5	5
Glasscock County	65	108
Howard County	2,650	2,658
Jones County	2,735	2,651
Loving County	30	25
Mitchell County	4,105	4,100
Pecos County	3,615	1,580
Scurry County	25	25
Upton County	20,650	20,756
Winkler County	690	1,950
Total West Texas district	96,130	91,602
Grand total N. and W. Tex.	261,465	259,177
Increase	2,288	

NORTH CENTRAL TEXAS COMPLETIONS

Archer County

American Refining Co. and others' No. 13 Turbeville, was a duster at 1,525 feet. Arco Oil Co. and Young's No. 1 Parkey was also a failure at 1,765 feet. Barnsdall Oil Co. and Trahan's No. 1 Perkins and others made 40 bbls. of oil and 30 bbls. of salt water at 1,745-47 feet. L. T. Burns' No. 1 Jackson-A was dry at 1,609 feet; No. 5 Turbeville-E pumped 95 bbls. at 1,452-78 feet; No. 6 swabbed 250 bbls. the first 24 hours at 1,475-82 feet. Marland Oil Co. and Kentucky's No. 1 Wilson was a failure at 1,501 feet. Petroleum Producers Co.'s No. 5 Turbeville-C had sand at 1,443-71½ feet and made 70 bbls. Simms Oil Co. and Burns' No. 10 Turbeville-A made 85 bbls. initial from sand at 1,438-69 feet.

Brown County

Amerada Petroleum Corp.'s No. 25 J. H. Fry pumped 157 bbls. after a 4-quart shot at 1,280-1,312 feet. Anna Belle Oil Co.'s No. 2 Kilgore found sand at 1,325-35 feet and pumped 35 bbls. after a 20-quart shot; No. 9 was dry and abandoned at 1,410 feet. So was Barbara Oil Co.'s No. 5 Willis, at 1,610 feet. Bradstreet and others' No. 8 Stout was shot with 20 quarts at 1,181-1,205 feet and pumped 150 bbls. Hughes Development Co.'s No. 1 Shore made 1,750 bbls. initial from sand at 1,302-22 feet after a 5-quart shot. Humble Oil & Refining Co.'s No. 10 Armstrong pumped 10 bbls. after a 20-quart shot at 1,183-92 bbls.; No. 11 Hickman was shot with 30 quarts at 1,210-1,228 feet and pumped 2 bbls.

McKenna's No. 17 Foster was junked and abandoned at 1,020 feet; No. 1 Shore (formerly No. 3) made 2,480 bbls. initial from sand at 1,303-20. McLester Oil Co.'s No. 20 Wooldridge made 35 bbls. at 1,203-29 feet. Mexana Oil Co.'s No. 4 Eddington was a duster at 1,365 feet. Prairie Oil & Gas Co.'s No. 1 Gaines was also a failure at 1,465 feet. So was Price & Daniels' No. 1 Selvidge at 1,202 feet. Rex Pyramid Oil Co.'s No. 9 J. H. Fry made 110 bbls. initial from sand at 1,303-09 feet. Shoup Jr.'s No. 6 Byler had sand at 1,270-82 feet and made 10 bbls. initial. Sinclair Oil & Gas Co.'s No. 22 J. H. Fry made 655 bbls. from sand at 1,305-17 feet.

The Texas Company's No. 37 Lowe found sand at 1,303-38 feet and made 500 bbls. first 24 hours but dropped to 140 bbls. after a 7-quart shot; No. 38 was shot with 5 quarts and made 640 bbls. initial from sand at 1,311-36 feet. Tidal Oil Co.'s No. 2 Arledge had sand at 1,280-1,306 feet and made 75 bbls. after it was shot with 7 quarts. Wentz Oil Corp.'s No. 10 Shore was plugged back from 1,338 feet and made 110 bbls. initial from sand at 1,310-32 feet. The last 6 feet carried water. Brands and others' No. 1 Ragsdale location was abandoned. Loufbourrow's No. 1 Humphrey was a duster at 1,615 feet.

Callahan County

Beams & Kingwood's No. 1 Jackson was dry and abandoned at 1,512 feet. Deener's No. 1 Bryant was a failure at 1,645 feet. Mississippi Valley Oil Co.'s (Tidal Oil Co.'s) No. 1 Seale Est. was also a duster at 2,835 feet. So was Oklavania Oil Co.'s No. 1 Hays at 3,205 feet. Shaw and others' No. 1 Miller swabbed 100 bbls. at 1,661-95 feet after a 120-quart shot.

Clay County

Coal Brothers' No. 1 Boyd and others was a failure at 905 feet. So was Empire Holding Corp.'s No. 2 Barry, Jr., at 831 feet. It failed to pick up original oil show at 773-78 feet.

Coleman County

Roth & Faurot's No. 1 Sealey & Smith made 7,000,000 feet of gas at 2,580-82 feet. Chanet and others' No. 3 Overall had sand at 2,210-20 feet and made 14,-250,000 feet of gas.

Cooke County

Hughes Development Co.'s No. 6 Embry pumped 15 bbls. at 1,201-12 feet. Lynch, Stahl & Burris' No. 1 Walling & Marty made 6,320,000 feet of gas at 1,-171-90½ feet. McElreath & Suggett's No. 1 Fischer was dry and abandoned at 2,004 feet. Oil Operators Trust Co.'s No. 2 Kleiss found sand at 1,584-96 feet and swabbed 672 bbls. the first 48 hours and flowed 135 bbls. overnight at 30.7 gravity.

Eastland County

Corzelius & Outlawa's No. 1 Terrell was a failure at 1,530 feet. Gholson and others' No. 4 Duffer abandoned location. Griesedick's No. 1 Parsons was a duster at 1,707 feet. Texas Pacific Coal & Oil Co.'s No. 33 Norwood, pumped 20 bbls. at 3,419-60 feet.

Jones County

McLester and others' No. 1 Will Hyatt was a duster at 2,750 feet. Midwest Exploration Co.'s No. 3 Throckmorton swabbed 200 bbls. at 2,505-29 feet; No. 4, also made 187 bbls. at 2,-505-14 feet.

Montague County

Barnsdall Oil Co.'s No. 5 Howard and others found sand at 1,356-86 feet and made 20 bbls. Cato Oil Co.'s No. 12 Rollins estate, pumped 40 bbls. at 829-73 feet. Pure Oil Co.'s No. 4 Crowe and others pumped 35 bbls. of oil and 5 per cent water at 877-98 feet; No. 1 Keck-A was a failure at 2,081 feet. Smith Oil Co.'s No. 6 Maddox had sand at 880-98 feet and pumped 48 bbls.

Shackelford County

Godfrey Oil Co.'s No. 1 Hill was temporarily abandoned at 802 feet. Gwinnup and others' No. 1-61 Poindexter was dry at 1,515 feet. So was Lee & Dingee's No. 3 Myer, at 1,130 feet. The location of Lester and others' No. 1 Goodwin was abandoned. Magnolia Petroleum Co.'s No. 4 Moberly was a failure at 1,-970 feet. Milham Corp.'s No. 4 Sedwick, location was abandoned. Mississippi Valley Oil Co.'s No. 1 Manley was a duster at 2,503 feet. Moore and others' No. 1 Fincher, location was abandoned. Phillips Petroleum Co.'s No. 4 Brooks was temporarily abandoned at 100 feet. The location of Roeser & Pendleton's No. 50-A-60 Cook was abandoned. Rose and others' No. 2 Moberly pumped 25 bbls. at 1,384-93 feet. Southern Petroleum Exploration Co.'s No. 4 Dyer had sand at 900-10 feet and pumped 40 bbls. White Eagle Oil & Refining Co.'s No. 1 Gorsuch found sand at 1,560-77 feet and pumped 40 bbls. of oil and 10 bbls. of salt water.

Stephens County

Texas Fidelity Oil Co.'s No. 8 Pratt made 30 bbls. of oil at 1,903-2,015 feet.

Throckmoton County

Reiter-Foster Oil Co.'s No. 2 Elliott was a duster at 4,150 feet. Woolems and others' No. 1 Rogers, hole was junked at 450 feet. Woolems and others' No. 1-A Rogers was a failure at 800

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WHAT IS HAPPENING TO GASOLINE

(Continued from Page 36)

The increase in cracking alone was more than sufficient to take care of the increase in consumption both domestic and exports in the first two months of the year.

The increase in natural gasoline used at refineries was enough to take care of almost twice the gain in exports.

There was a 25 per cent increase in total natural gasoline production, or 1,175,000 barrels more than in the same two months in 1926. Part of this of course is represented in the increase in natural gasoline used at refineries but the rest is absorbed by consumers without being reflected in the government's consumption figures on refinery operations. It is gasoline consumed and can be taken into account as by that much reducing the increase shown by the bureau's figures on consumption.

In February the natural gasoline produced amounted to 4,400,000 barrels daily and it is certain to go higher, as Seminole and smaller pools had not reached their present development.

The statistics of the industry should be the chart for the future. Many men shy at statistics as requiring too much trouble to get at their meaning. For this reason The Oil and Gas Journal has taken particular pains to furnish reliable interpretations of the drift of business revealed by these statistics so they can be readily understood by busy readers. The value of these interpretations can be seen by the record of experience.

NEW WELL ATTRACTS ATTENTION TO HUNTON LIME. LATE FIELD NEWS

One of the most interesting spots in Oklahoma is the territory around the well recently drilled by C. J. Wrightsman, Pierce Petroleum Co. and Croxton & Bucklin, in Section 30-7-4, Pottawatomie County.

From a geological as well as a producing point of view, the Wrightsman-Pierce well is of great importance, as to a certain degree it lends special emphasis to the fact that in this part of the state the Hunton lime is expected to be a producing formation of greater importance than the famous Wilcox sand which has consistently produced within the limits of a trend running southwest-northeast from the Bald Hill Field in northeastern Okmulgee County to the present limits of the Seminole Pool in Seminole County.

This trend has been extendedly slowly and has established the productivity of various fields encountered during the past eight years. It is about 40 miles in width, and is expected to be the scene of an extensive wildcatting play when producing conditions are improved, and for this reason it holds a paramount interest to those who operate in the central Oklahoma fields.

In the wells drilled to the east of and in the Seminole Field, a limited amount of Hunton formation is found, and with the observation of wells to the west and south it is noticeable that the Hunton thickens perceptibly. In some wells, immediately west of the Seminole Field, a body of only 10 feet of Hunton was found, and in the well drilled by the Darby Petroleum Co. and Independent Oil & Gas Co. in Section 15-7-4, it was noticeable that the Hunton had thickened. The old well drilled by the Magnolia Petroleum Co. in Section 20-7-5, near Maud, Okla., had only about 6 feet of Hunton, and the farther west observations are taken the greater the body of Hunton found.

The wildcat wells southwest of the Wrightsman-Pierce well have found a very thin body of Wilcox sand, and it has been discovered very deep owing to the thickness of the Hunton. For these reasons a close study has been made of well logs in this territory, and the opinion of geologists who have concentrated their attention upon this part of the state is that the Hunton will be the better producing stratum.

The Wrightsman-Pierce well was completed three weeks ago, and is variously estimated as having a potential production from 1,000 to 2,000 bbls. daily. The well is now pinched in and is making 35 bbls. an hour through a quarter-inch choke. The Magnolia Pipe Line Co. has built a 2-inch line to the well which is taking the oil now produced. It is thought unlikely that the well will be deepened until adequate pipe line accommodations are available, and there is no rush by any pipe line company to connect to any well at this time. It is possible that the Pierce Petroleum Co., which is a part owner in the Consolidated Pipe Line system, will extend the Consolidated line from Seminole to the new well and

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Panhandle Wildcats Feature of Week

Wilcox-Pampa and Roxana Pools Each Extended 2 Miles. First Movement of Oil Through Pipe Line Near

By James H. Dameron
Staff Correspondent, Texas Panhandle Fields

FORT WORTH, Tex., Apr. 11.—Semi-wildcat tests in the Texas Panhandle brightened an otherwise colorless report from the Panhandle during the week, although wells in proven territory and rank wildcat territory came through with some excitement. The shutdown of Panhandle operations continues, but daily average production increased 500 bbls. over the previous week.

The Wilcox-Pampa Pool was in the limelight with a completion, which, with a recent extension, has extended the pool in two directions. Blackwell & McGee's No. 1 Bowers, SE cor. Section 92, Block 2, Gray County, carried the production limits of the area 2 miles to the south. It started off making oil when 5,000,000 feet of gas was picked up in granite wash at 2,970-74 feet. The well had 2,000 feet of oil in the hole from 2,946-50 feet. All of the oil was blown from the hole, and the well produced 90 bbls. before settling down to spraying. It is estimated to be spraying 75 bbls. daily. A separator is being set up and the well is to be deepened.

Roxana Pool Extended

White Deer Oil Co.'s No. 1 Jordan-Brown, Section 104, Block 4, is showing for a 2-mile-to-the-west extensioner of the Roxana Pool in Carson County. It is reported to be spraying a little oil from pay at 3,018-27 feet. Bain and associates' No. 1 J. L. Moore, Section 125, Block 4, I. & G. N. Survey, Hutchinson County, and a mile north of the Roxana Pool, was completed as a producer. It extended the pool and is another well towards linking up the production in Carson and Hutchinson Counties. The well had the pay in lime at 3,040 to 3,125 feet and swabbed 550 bbls. the first 24 hours after a 360-quart shot. Production was off the second day, but on the third day the well came back making 120 bbls.

About 4 miles to the west of the Roxana Pool, Delmar Oil Co.'s No. 1 T. D. Lewis, Section 115, Block 4, was completed as a 70-bbl. well. It had the pay in granite wash at 3,184-90 feet and flowed 140 bbls. It averaged 70 bbls. daily for a week.

In the Parks area, Hughes Development Co.'s No. 1 F. E. Percival, Section 199, Block 3, is a 250-bbl. well from granite wash and lime at 3,190 to 3,275 feet. More production was found in eastern Gray County when Travis and associates' No. 1 Back, Section 44, Block 25, made one bailer an hour after a 90-quart shot at 2,650-70 feet. It is to be swabbed and later placed on the beam.

Biggest Well of Week

Twenty-three completions recorded during the week gave Panhandle 5,031 bbls. of new production. The biggest well of the week was Phillips Petroleum Co., Gibson Oil Corp and McMillan's No. 7 J. A. Whittenburg, M. Whitley Survey. It is an 800-bbl. producer after a 100-quart shot at 2,863-98 feet, total depth 2,900 feet.

Although some operators in the Panhandle are not making an effort to curtail drilling the vast majority of operators are making a concerted effort to check drilling in that wide area. Each week is showing a substantial decrease in the total number of operations. This week a drop of 25 in the total number of drilling wells was reported, as well as slumps in wells shut down. The summary follows: First reports, 7; locations carried over from last week, 26; derricks being built, 7; derricks standing, 22; derricks being rigged, 18; wells drilling, 324; shut down, 61; and completions, 29—a total of 494. As a result, production of the Panhandle is expected to show a steady decline.

Likewise, all Panhandle operators are out of the market for acreage temporarily. Where buyers a few weeks ago would buy without instructions, the division head now submits anything of real interest to headquarters for action. Numerous leases are being advertised.

Wildcat Operations

Panhandle has 56 rank wildcats in its environs, with 39 of them actually drilling. Eleven have been shut down since the inception of the depression period, and the remainder are inactive, being either rigs or derricks. Some of the 39 drilling wells are expected to be shut down before reaching contract depths.

The first movement of oil out of the Panhandle through pipe lines is expected to start April 15 as scheduled. It will be through the Gulf-Magnolia line. The Humble Pipe Line Co.'s line is expected to start along about the same time. While storage in Panhandle is increasing, there is considerable available storage in the field.

A number of major operators in the field have worked out a plan by which they expect to make a material cut in drilling costs. Heretofore, contractors have received from $3.75 to $5.50 a foot for inside wells and $4 to $6 a foot for wildcats. Under the new plan, operators will pay from $3.75 to $4 a foot for inside wells and $4 to $4.50 for wildcat wells.

Magnolia Petroleum Co. has applied to the Texas Railroad Commission for a permit to construct a 15,000,000-foot gas capacity carbon-black plant. The plant is to be a two-unit plant, 36 burners to the unit, and is to be erected on the Worley lease in the Shamrock Field in Wheeler County, 17 miles from the town of Shamrock. If the permit is granted, it will be the second plant for that company in the Panhandle area.

It is rumored that the United States Government contemplates the erection of a helium extraction plant in Panhandle. Such a plant would agument the supply now secured from the Fort Worth plant. The presence of a chemist from the Fort Worth plant in Panhandle last week gave rise to the rumor. He spent a couple of days in the gas area. The Bureau of Mines recently made a test of gas in Panhandle and found it contained more or less helium.

Hutchinson County Wildcats

Probably the most interesting of Panhandle wildcats will be the Marland Oil Co.'s No. 1 Carver, William Heath Survey, Hutchinson County. The water found at 3,270-97 feet seems to be decreasing slightly. Five-inch liner was being run Monday.

Gulf Production Co.'s No. 15 Johnson, in lower Hutchinson County, is proving an interesting well. It started off making around 300 bbls. from lime pay at 2,903-09 feet. It was drilled on down 6 feet and is now making 845 bbls. Completion is being delayed by a fishing job.

Mid-Kansas Oil & Gas Co.'s No. 2 Curlee, SW Section 41, Block 24, flowed 640 bbls. from granite wash at 2,301-26 feet. The well is in the Shamrock Pool of Wheeler County. The well is making a small amount of gas, but made 5,000,000 feet at 2,275-80 feet, which was cased off.

Carson County

Delmar Oil Co.'s No. 1 T. D. Lewis, Section 115, Block 4, topped the pay in granite wash at 3,184 feet and drilled to 3,190 feet. The well flowed 140 bbls. the first 24 hours and averaged 70 bbls. daily for a week. Hughes Development Co.'s No. 1 F. E. Percival, Section 199, Block 3, is flowing 250 bbls. daily from granite wash and lime at 3,190 to 3,275 feet. Roxana Petroleum Corp.'s No. 5 E. F. Bryan, 1-A, was shot with 130 quarts in lime and granite wash at 3,165 to 3,250 feet and is flowing 275 bbls daily. Roxana Petroleum Corp.'s No. 2 C. R. Garner, Section 106, Block 4, was shot with 120 quarts in lime at 3,129-60 feet and started off making 650 bbls. daily. The Texas Company's No. 1 C. A. Noel, Section 25, Block 4, was completed as a 25,000,000-foot gas well at 2,275 to 2,759 feet.

Moore County

Moore County's single completion was a gas well. It was Prairie Oil & Gas Co.'s No. 2 Sneed, Jr., Section 26, Block 6-T, which was plugged back from 4,300 feet to 2,945 feet and completed as a 11,000,000-foot gas well at 2,471 to 2,550 feet.

Gray County

A rig is on the ground but has been temporarily abandoned for Johnson & Marin's No. 1 F. Holloway.

Magnolia Petroleum Co.'s No. 1 fee, Section 11, Block 3, was good for 206 bbls the first 24 hours after a 120-quart shot in sandy lime at 2,915-84 feet. The well averaged 139 bbls. for a week; total depth 3,004 feet. Phillips Petroleum Co.'s No. 2 H. M. Davis, Section 86, Block 3, produced 100 bbls. from granite wash at 3,110-18 feet and was agitated. The first show of oil was found at 3,054 feet and a showing of oil and gas was encountered at 3,061 feet. Same company's No. 2 H. M. Davis, same section, swabbed 200 bbls. from granite wash at 3,071-73 feet, total depth 3,129 feet. The first showing was found at 3,067 feet.

Phillips Petroleum Co.'s No. 4 H. M. Davis, Section 86, Block 3, swabbed 150 bbls. from granite wash at 3,078 to 3,110 feet and 3,135-48 feet. The first gas was found at 2,955 feet and the total depth of the hole is 3,153 feet. The Texas Company's No. 1 H. M. Barrett, Section 131, Block 3, is a 30,000,000-foot gas well at 2,615-50 feet; total depth 2,776 feet. Two small wells were completed on the Wilcox-Pampa Oil Co.'s Worley & Reynolds lease, Section 62, Block 3. No. 20 is swabbing 25 bbls. from granite wash at 2,970 to 3,021 feet. The well had 5,000,000 feet of gas at 2,645-65 feet and 4,000,000 feet of gas at 2,820 feet; the first show of oil was found at 2,855 feet.

Hartley County

W. H. Holmes and associates' No. 1 C. B. Coots, Section 57, Block XR, was dry and abandoned at 2,990 feet. Kork Oil Co.'s No. 1 J. M. Shelton estate, Section 1, Block 8-B, was spudded and temporarily abandoned.

Hutchinson County

Marland Oil Co.'s No. 1 Cal Merchant, Section 38, Block 47, H. & T. C. Survey, topped the pay in lime at 2,820 feet and drilled to 2,865 feet. The well flowed and swabbed 165 bbls. the first 24 hours. The rig has been temporarily abandoned for Plains Drilling Co.'s No. 2 W. S. Christian. Sunrise Oil Co.'s No. 1 William Lydal, Section 33, Block Z, was temporarily abandoned at 3,030 feet. Bain and associates' No. 1 J. L. Moore, Section 125, Block 4, I. & G. N. Survey, topped the pay in lime at 3,040 feet and was drilled to 3,125 feet. The well was shot with 360 quarts at 3,013 to 3,125 feet and flowed and swabbed 550 bbls. the first 24 hours. Production was off the second day and it made 120 bbls. the third day and was completed.

Currie Brothers and J. R. Phillips' No. 4 H. E. Smith, Section 14, Block Y, had the pay in lime at 2,900-80 feet and was good for 100 bbls. The well was shot in that formation with 360 quarts and responded with 250 bbls. Location was abandoned for Dixon Creek Oil Co.'s No. 32 H. E. Smith. The rig was abandoned for Flanders Oil Co.'s No. 1 W. R. Harvey. Magic Eighty Oil Co.'s No. 1 Kingsland, Section 4, Block Y, was shot with 70 quarts in lime at 2,945-97 feet and is swabbing 30 bbls. daily; total depth 3,000 feet.

Phillips Petroleum Co.'s No. 8 Johnson Brothers (Gordan), Section 21, Block Y, had the pay in lime at 2.891 to 2.937 feet. The well is being agitated and is flowing 150 bbls. of fluid, 50 per cent water, after a 20-quart shot. Phillips company's No. 20 J. A. Whittenburg-Patton, M. Whitley Survey, is swabbing 300 bbls. daily from lime at 2,891 to 2,905 feet. Phillips Petroleum Co.'s No. 11 J. A. Whittenburg was good for 75 bbls. naturally from 2,876 to 2,908 feet but boosted up to a 200-bbl. well when shot with 90 quarts at 2,876 to 2,900 feet.

Phillips Petroleum Co., Gibson Oil Corp. and McMillan completed four wells on their J. A. Whittenburg lease in the M. Whitley Survey. No. 5 was shot with 60 quarts at 2,894 to 2,918 feet and was good for 75 bbls. No. 7 was the best Panhandle completion of the week. It had the lime pay at 2,863 to 2,898 feet; total depth 2,900 feet, and was good for

(Continued on Page 149)

WILDCAT OPERATIONS IN PANHANDLE

Week Ending April 9, 1927

ARMSTRONG COUNTY

Company, Well, Farm Name, Section and Block—	Remarks—
United Oil & Trust Co.'s No. 1 J. P. Reck, Sec. 162, Blk. 4, H. & G. N. Sur.	Spudded and shut down.

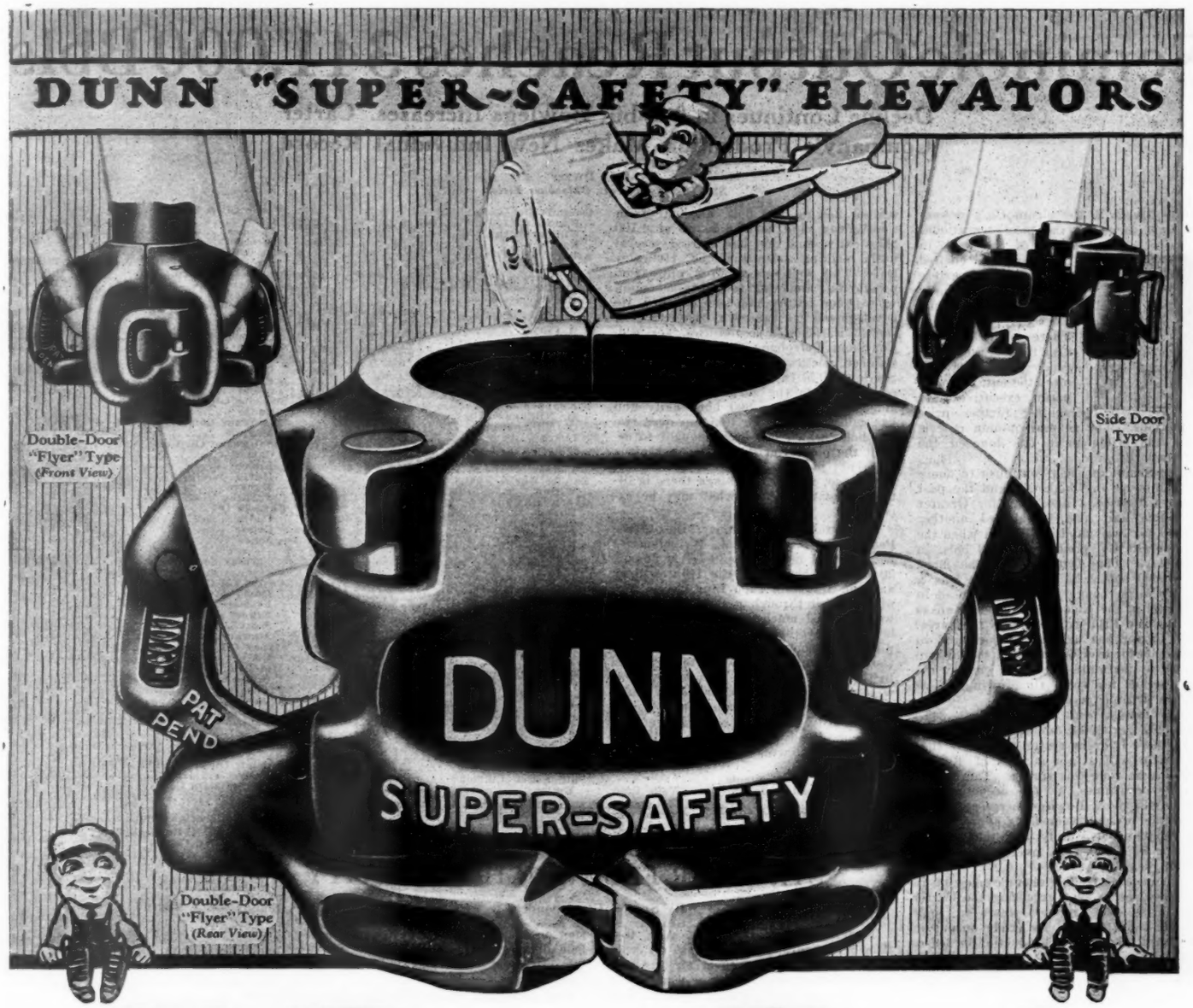
BRISCOE COUNTY

C. S. Rice's No. 1 J. C. Anderson, SE cor. NW NW Sec. 23, Blk. B-3, B. S. & F. Sur.	Drilling 1,516 ft.
Smith & Baker's No. 1 J. W. Owens, Sec. 11, Blk. GC2	Location, temporarily abandoned.

CARSON COUNTY

Amatex Dev. Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y	Shut down 1,980 ft.
Champlin Ref. Co.'s No. 2 E. F. Bryan, Sec. 92, Blk. 4	Fishing for tools 3,180 ft.
Empire G. & F. Co.'s No. 1 Burnett-B	Drilling 200 ft.
Empire G. & F. Co.'s No. 1 Burnett-C	Set 15-in. casing 400 ft.
Empire G. & F. Co.'s No. 1 C. R. Garner	Drilling 1,400 ft.
Empire G. & F. Co.'s No. 2 M. P. Co. fee-A, NE cor. SW Sec. 91, Blk. 4	Top lime 2,278 ft.; top pay 3,080 ft.; lime, 200 ft. oil in hole; total depth 3,085 ft.
Empire G. & F. Co.'s No. 3 M. P. Co. fee-A, SE cor. SW Sec. 91, Blk. 4	Drilling 1,950 ft.
Gulf Prod. Co.'s No. 1 Noel, SE cor. SW Sec. 198, Blk. 3	Drilling lime 2,730 ft.; making 3,000,000 ft. gas.
J. K. Hughes Developing Co.'s No. 2 F. E. Percival, NW cor. E ½ NW Sec. 199, Blk. 3	Setting up rotary 1,050 ft.
Marland Oil Co.'s No. 1 Burnett-J, C NE NE Sec. 121, Blk. 5	Drilling 2,275 ft.
Marland Oil Co.'s No. 2 J. W. McConnell	Spudded.
Marland Oil Co.'s No. 2 C. R. Garner, Sec. 198, Blk. 3	Drilling 2,095 ft.
Marston Oil Co.'s No. 1 J. L. Noel	Drilling 2,564 ft.

(Continued on Page 97)



The "Rotary Flyer"

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Seminole Output Reaches 341,000 Bbls

Decline Continues in 9-6, but Bowlegs Increases. Carter Company's Production Makes New Individual Record

By J. L. Dwyer
Staff Correspondent. Oklahoma Fields

The Magnolia Petroleum Co.'s newest schedule furnished the most sensational news of the week in Oklahoma and elicited from many quarters the hope that any further price reductions may be avoided. There is little doubt that the remaining crude purchasers will meet the cut, although many executives are against further price reductions. The general opinion now is that the crude price has touched the bottom.

The Seminole Field continues to dominate interest in Oklahoma, and the past week witnessed a new peak for Greater Seminole and also established another record for individual production when the Carter Oil Co. produced 78,700 bbls. in one day. This figure passed the mark of 76,000 bbls. which the Empire Gas & Fuel Co. is thought to have produced in one day in the Eldorado Field in Kansas during the 1917 excitement in that area. The Carter has held the major hand in Seminole for over 60 days and should continue to maintain the large end of the production for some time owing to its active drilling program.

The newest peak for Seminole is 341,000 bbls. registered during the past week, and there is every reason to believe that the field will attain a peak of 400,000 bbls. some time this spring. The decline in 9-6 continues, as the accompanying table will show. Bowlegs increases weekly and the present week finds a production of 46,000 bbls. daily for that sector, which is 6,000 bbls. over the previous seven days.

There is no trouble about congestion in the field at present excepting the Carter Oil Co.'s own troubles where in some cases it has limited its crude output in order to take care of production on leases owned by customers of their lines. It is thought that the Carter at one time last week has a potential production of 81,000 bbls.

The recently completed pipe line of the Oklahoma Pipe Line Co. is now taking about 35,000 bbls. daily from the field, and has offered much relief. The two lines being constructed to the field (Pure Oil Co. and Empire Pipe Line) will not be finished this month. The movement of oil by tank cars from the field continues and about 20,000 bbls. daily is leaving Seminole by this method.

Storage Construction

One progressive step is the heavy steel storage construction which is now under way at Seminole. There are 163 large tanks under construction, and the only complaint voiced about this activity is that it comes 90 days too late. Had it been rushed earlier in the history of Seminole, general conditions in the field might have been different. There is over 40,000,000 bbls. of steel storage available in the field at present, and 9,000,000 bbls. under construction. Let it be recalled that at Cushing steel was built for 40,000,000 bbls., and Cushing never produced the oil which Seminole has put out. It is possible that in total recovery Cushing may excel Seminole, but a comparison of storage facilities in both fields while they experienced their period of congestion is interesting, and might influence the question, "Is the petroleum industry really progressing?"

Earlsboro Results

The Earlsboro section of Seminole shows unusual results during the past week. The Magnolia Petroleum Co.'s No. 1 Holmsley, in Section 11-9-5, which started flowing 190 bbls. an hour from the Wilcox sand, is holding up at 4,100 bbls. daily, and this has started several wells drilling offsetting the Holmsley lease. This well was about 2 miles from production, and was found in a region where poor results had been expelled. Its development has caused a complete revision of Earlsboro's possibilities. The Mid-Continent Petroleum Corp.'s No. 1 McCumber, northwest of the State lease in Section 9-9-5, is another well which has contributed to the surprises of this region. It is flowing 800 bbls. daily and has caused production to jump over two dry holes which has been thought to delimit the pool. Earlsboro now presents a different picture from Earlsboro two weeks ago, and at this stage there is little information about what may be expected.

In Pottawatomie County, the Pierce Petroleum Co. and C. J. Wrightsman's wildcat well in Section 30-7-4 is flowing 30 bbls. an hour from the Hunton lime, and the Magnolia Pipe Line Co. is running the oil through a 2-inch line. The well is rated much better than this, but is limited by the capacity of the present pipe-line accommodations. This is one of the best Hunton lime wells to be drilled in the State, and when permitted to flow wide open should make 1,500 bbls. daily.

Seminole Production

The daily average production of the Seminole Field by companies, wells and leases for the week ending April 8 follows:

Seminole Company and lease—	Wells	Prod.
Amerada Pet. Corp.:		
Fixico	4	4,385
Killingsworth	4	2,321
Rentie	4	3,360
Atlantic O. P. Co.:		
N. Cudjo	3	5,309
J. Cudjo	2	off
Barnsdall Oil Co.:		
Jones	2	7,235
Carter	9	10,529
Carter Oil Co.:		
B. Carter	2	165
J. Carter	4	120
F. Carter	4	1,375
R. Cudjo	3	7,225
W. Cudjo	1	1,885
Gilliland	1	off
Grisso	6	8,265
Knappenberger	3	3,000
M. Killingsworth	7	14,117
G. Killingsworth	3	4,455
Lukes	3	5,735
Simpson	1	240
Strothers	1	2,180
Vierson	2	855
Empire Gas & Fuel Co.:		
Wilson	3	5,218
Gypsy Oil Co.:		
Butler	3	2,101
Carter	8	2,985
Fixico	5	205
Harjo	2	1,765
Wolfe	5	5,711
Independent Oil & Gas et al:		
P. Fixico	2	327
T. Fixico	8	1,660
Jones	4	1,508
Indian Terr. Ill Oil Co.:		
Bowlegs	7	4,363
Goodin	4	893
Harjo	4	1,431
James	5	1,215
Reed	3	54
Kingwood-Roxana:		
Johnson	5	4,427
Magnolia Pet. Co.:		
Franks	2	3,188
Mid-Cont. Pet. Corp.:		
Rentie	8	3,450
Tayeche	7	2,140
Mid-Kansas Oil & Gas Co.:		
Pressley	1	916
Johnson	1	1,785
Philmack-McCulloch:		
Butler	1	166
Prairie Oil & Gas Co.:		
Gross	5	240
Spencer	1	30
Strothers	5	10,315
Pure Oil Co.:		
Strothers	17	15,794
Roxana Pet. Corp.:		
Harber	1	315
Lashley	1	433
Sinclair Oil & Gas Co.:		
Carter	1	35
Cudjo A	6	3,545
Cudjo B	3	4,150
Fixico*	2	2,675
T. B. Slick:		
Cudjo	1	3,862
Franks	6	8,747
Giblet	1	2,190
Superior Oil Co.:		
Cudjo	4	7,420
The Texas Company:		
Mayhue	1	Off
Tidal-Osage Oil Co.:		
Carter	4	3,895
Fixico	6	7,715
Harjo	6	725
Mahardy	4	820
Tayeche	2	1,270
Turman Oil Co.:		
Cudjo	4	7,251
Grisso	1	2,118
Jones	3	6,326
Total Seminole	242	218,760
Searight Pool		
Carter Oil Co.:		
Davis	5	9,145
Frazier	2	3,385
Kiker	1	Off
Scott	1	80
Stewart	2	475
Gypsy Oil Co.:		
Cudjo	1	1,388
Mid-Cont. Pet. Corp.:		
Grayson	1	7,890
Prairie Oil & Gas Co.:		
Carter	1	50
Houck	1	20
Kinkade	6	7,315
Pure Oil Co.:		
Aldridge	1	2,440
Searight et al	2	Off
Sinclair Oil & Gas Co.:		
Polly	1	655
Twin State Oil Co.:		
Jennings	1	70
Total Searight	26	32,913
Bowlegs Pool		
Amerada Pet. Co.:		
Rascoe	3	8,270
Carter Oil Co.:		
Bowlegs	1	4,250
Walker	1	4,565
Wise	1	3,330
Empire Gas & Fuel Co.:		
Lacey	1	5,220
Gypsy Oil Co.:		
Walker	2	6,577
Indian Terr. Illum. Oil Co.:		
Davis	1	2,631
Goforth	1	2,173
Livingston	2	8,166
Walker	1	156
Roxana Pet. Corp.:		
Taylor	1	Off
Sinclair Oil & Gas Co.:		
Adams	1	130
Bowlegs	1	770
Harjo	1	Off
Total Bowlegs	18	46,238
Earlsboro Pool		
Amerada Pet. Co.:		
Anderson	2	10,338
Gypsy Oil Co.:		
Bora	1	Off
Earl	1	1,767
State land	3	15,289
Magnolia Pet. Co.:		
Holmsley	1	4,193
Mid-Cont. Pet. Corp.:		
McCumber	1	870
Phillips Petroleum Co.:		
Graham	1	3,442
Prairie Oil & Gas Co.:		
Baker	1	68
Sinclair Oil & Gas Co.:		
Foreman	1	25
Earlsboro shallow wells	23	4,860
Total Earlsboro	35	40,792
Grand total Greater Seminole	321	338,703

Steel Storage Tanks

The steel storage tanks in the Seminole Field are divided as follows. The figures are as of April 4:

Stock Tanks— Company—	No.	Size	Stock
Amerada	7	55	280,575
Barnsdall	1	55	none
Carter	17	55	759,494
Mid-Cont. Pet.	1	55	none
Gypsy Oil Co.	3	55	22,688
Indian Terr. Co.	5	55	48,577
Magnolia	15	..	598,433
Pure Oil Co.	15	55	545,136
Prairie	9	55	409,781
T. B. Slick	5	55	214,780
Turman Oil Co.	1	80	77,500
Tidal	3	80	142,188
Miscellaneous	9	55 & 80	no stock
Total	90		3,099,153
Working Storage—			
Barnsdall	2	55	83,231
Barnsdall	1	80 & 55	13,319

HOSPAH SECOND SAND SHOWING STRONGER FLOW, HIGHER GRAVITY

By Special Correspondent

FARMINGTON, N. Mex., Apr. 9.—The recent drop in the price of crude has had no apparent effect on this area and activity is going along as usual. Confirmation has been made of the new strike in a second sand in the Midwest Refining Co.'s No. 1 Santa Fe well on the Hospah structure in the Seven Lakes district in McKinley County, 75 miles southeast of Farmington, in Section 1-17n-9w. This sand, encountered 60 feet below the first producing horizon, at 1,590 feet, shows a stronger flow than the first and is of higher gravity. Two strings of tools have been lost in the hole since the new strike. No test can be made of the production due to the lost tools, also lack of adequate storage. Six 5,000-bbl. tanks are being erected and it is hoped a test can be made when the tools are recovered. The Midwest company has spudded in its second test, on a structure a half mile northwest of the discovery well. Several independent companies also have rigs up.

The Marland Oil Co. in McKinley County is reported to have abandoned its No. 1 Jones, NE SE, Section 4-15n-6w, in the Dakota at 1,772 feet, due to water.

The Union Oil & Mining Co. in the Farmington district, Section 8-29-9, is erecting a steel derrick over its No. 2 Pine, the standard rig having been destroyed by fire. This well encountered an oil sand at 2,950 feet which is estimated at 10 bbls. daily. However, there are four strings of tools in the hole and the sand had only been tapped.

The Senate Oil Co.'s No. 1 Garland, in Section 34-29n-11w, started drilling today at 1,753 feet, after recovering a string of lost tools.

The T. C. N. Oil Co. has made a location on the Lanier permit in the Bloomfield district on the SW SW, Section 9-29n-11w, and operations will be under way at once.

The San Juan Petroleum Corp.'s No. 1 Palmer, NE NE, Section 17-29n-13w, struck a gas flow at 1,073 feet estimated at 250,000 feet. The flow is apparently increasing, although a water shutoff has not as yet been assured.

The Miley Oil Co., drilling on the Red Mesa structure in Section 32-33-12, used a shot in the bottom of the hole which loosened the tools, but it was impossible to pull them through the casing. Another effort is to be made to pull the tools and if this is unsuccessful, they may move to a new location.

The No. 1 Jackson, drilled by Graham & Edwards in the Bloomfield district, was sold this week to John Baron Burg and associates of Albuquerque and when the hole was opened, it was found to have approximately 500 feet in the hole. This well is down 745 feet, and is located in Section 21-29-11.

The Portage Oil & Gas Syndicate's No. 2 Davis, NE SE, Section 24-30n-13w, encountered another flow of gas at 1,945 feet. This flow is in a formation above the Picture Cliff sand, to which the well will be drilled.

The Continental Oil Co.'s No. 17 Rattlesnake well in Section 2-29n-19w, is still endeavoring to sidetrack the lost string of tools. This is the deep test and is down 3,785 feet.

Drilling Report—Farmington

Mid-Continent Oil Co.'s No. 1 Hare, NE NW, Section 22-29-11, drilling at 565 feet; Mansfield No. 1 Emery permit, SW SW, Section 24-30-9, shut down to erect

(Continued on Page 137)

A few years back, the tire industry switched from fabrics to cords and continued at the same rate of production Suddenly the market became saturated—cord tires gave greater mileage—fewer tires were bought—prices dropped But more automobiles in service quickly took up the slack, requiring even more tires

Today in the oil business we face a somewhat parallel situation

With refiners switching from skimming to cracking, every barrel of crude oil now in storage is the equivalent of almost two barrels in the ante-cracking days

Conservation and good business, alike, demand that production of crude be kept within bounds if we are to maintain selling prices at a level which will justify the increasing use of the most efficient and profitable means known of producing gasoline:—the cracking process

Universal Oil Products Company
Owner of the Dubbs Process
310 South Michigan Ave
Chicago, Illinois

Mid-Cont. Pet.	3	55	35,880
Gulf P. L.	1	55	10,233
Gulf P. L.	1	55	28,861
Sinclair	1	55	12,500
Miscellaneous	3	55	no stock
Total	13		184,024
Grand total 103			3,283,177

Available room, 2,442,991 bbls.

Tanks Under Construction—

Storage No.	Size	Capacity
111	55	5,883,000
51	80	3,978,000
Working		
1	80	78,000
163		9,939,000

Carter County

Magnolia Petroleum Co. has rig up for No. 3 N. Hardin, SE cor., Section 18-1s-3w. The rig is being built for No. 1 E. Hefner, NE cor. SW, Section 33-1s-3w. Schermerhorn and others have built the rig for No. 3 Calvery, NW cor. SE SW, Section 2-2s-3w. The rig is also up for No. 1 Lyles, NW cor. SE NW, Section 11-2s-3w. The rig is up for Magnolia Petroleum Co.'s No. 1 M. Morris, SE cor. NE, Section 21-2s-3w. The rig has also been built for No. 14 J. Lohman, SE cor. SW SE, Section 23-2s-3w.

Humble Oil & Refining Co.'s No. 10 Jordan, NE cor. SW SW, Section 18-1s-3w has been completed for 500 bbls., the oil coming from broken sand 2,656-69 feet and 2,712-70 feet. Schermerhorn and others' No. 2 Calvery, SW cor. SE SW, Section 2-2s-3w made 420 bbls. the first 24-hour gauge from a series of broken sands 3,086-3,312 feet, the total depth being 3,379 feet. Roxana Petroleum Co.'s No. 1 Pierce, SE cor. NW SE, Section 7-2s-2w had sands from 2,340-44 feet and 2,776-86 feet from which it is producing 30 bbls. Atlantic Oil Producing Co.'s No. 2 Liles, SE cor. NW NW, Section 11-2s-3w had a series of broken sands from 2,634 feet to 2,990 feet and is making 140 bbls. Coline Oil Co.'s No. 10 Pierce, NE cor., Section 18-2s-2w made 188 bbls. the first 24-hour gauge from a series of sands 1,575-1,866 feet. Merrick and others' No. 5 Noble, NE cor. SE NE, Section 27-2s-2w has been abandoned at 1,272 feet.

Creek County

Shaffer Oil & Refining Co. & Prairie Oil & Gas Co.'s No. 1 Bruner, CEL SE, Section 17-17-8, is a rig. T. E. Mann made location for No. 1 Harjo, SE cor. SW NW, Section 6-18-10. Wilson & Atlartic O. P. Co. made location for No. 1 Sketer, SE cor. SW, Section 29-17-10. Skelly Oil Co. has the rig on the ground for No. 1 Yellowhead, SE cor. SW NW, Section 32-17-10. J. R. Cole has the machine at the location for No. 3 Sparks, CWL NW SW, Section 18-17-11. Devonian Oil Co. has moved a machine out to drill No. 4 Fulson, CSL SE NE, Section 5-16-11. C. G. Tibbons has a machine at the location for No. 1 Lane, NW cor., Section 29-15-9.

Magnolia Petroleum Co.'s No. 2 S. Vance, CEL SE SE, Section 6-18-7 is producing 100 bbls. from sand 2,503-38 feet. The Texas Co.'s No. 1 Sneed, NE cor. NW SE, Section 7-14-9 is dry and abandoned at 3,790 feet in the Wilcox sand. C. G. Tibbens' No. 35 Unallotted, NE cor. SW, Section 30-15-9 made a 50-bbl. producer after a shot of 130 quarts in the Wilcox sand 3,588-3,662 feet. O. M. Irelan's No. 2 Barnett, SW cor. NW SW, Section 9-17-11 is making 20 bbls. from the Red Fork sand 1,614-34 feet after a shot of 15 quarts. The Prairie Oil & Gas Co.'s No. 40 Rector, SE cor. NW SW SW, Section 5-18-7 is making 40 bbls. from sand topped at 2,448 feet. Pioneer Petroleum Co.'s No. 13 Bucktrot, NW cor. NE, Section 24-17-10 was completed for 70 bbls. in the Dutcher sand 2,431-88 feet. J. R. Cole's No. 2 Strip, SE cor. NW SE SE, Section 13-17-10 is a 30-bbl. well in the Dutcher sand 2,387-2,412 feet. Cumberland Petroleum Co.'s No. 3 Tiger, SE cor. NE SE, Section 13-17-10 topped the Red Fork sand at 1,827 feet, drilled to 1,846 feet and made 50 bbls. after a shot of 100 quarts. W. S. Turman's No. 2 Pemberton, CEL NW NW, Section 8-17-10 had the Wilcox sand 3,000-44 feet, was shot with 180 quarts and made 420 bbls. The Texas Co.'s No. 7 Simmons, SE cor. NW SE, Section 3-17-9 made a 20-bbl. well after a shot of 20 quarts in the Wilcox sand 3,280-88 feet. Mayflower and others' No. 1, Lot 4, Block 16, Section 6-18-12 in the Oakhurst Pool is making 5 bbls. after a 60-quart shot in the Turkey Mountain sand 2,265-72 feet. Plymouth Petroleum Co.'s No. 1 Traser, NE cor. SW NE, Section 10-18-11 is a dry hole at 2,597 feet in the Wilcox sand.

Garfield County

Sinclair Oil & Gas Co.'s No. 5 Dively, NE cor. SE NE, Section 14-22-4w, in the Garber Pool, was abandoned at 5,184 feet with a hole full of water. No. 37-A Hartley, NW cor., Section 18-22-3w had a hole full of water in the Layton sand 3,775-3,817 feet and has been abandoned. Roxana Petroleum Co.'s No. 29 Schroeder, NW cor., Section 18-22-3w is swabbing 147 bbls. from the Tonkawa sand 3,033-35 feet.

Logan County

Zingery & Bailey's No. 1 Baker, NW cor. NE, Section 5-17-1w had a hole full of water in the Wilcox sand 5,703-12 feet and is abandoned.

Kay County

Blackwell Oil & Gas Co.'s No. 11 Nix, C N half SE, Section 18-28-1e, is now drilling deeper at 2,265 feet in the Stalnaker sand. Marland Oil Co.'s No. 1-A Gaylor, NE cor. SW, Section 19-27-1w in the Blackwell district is an old well rigging up to deepen from the present total depth of 3,482 feet. Comar Oil Co.'s No. 1 Jennings, NW cor. SE, Section 19-27-1w is a rig under construction. Hag Oil Co.'s No. 3 Buessing, C N half NE, Section 20-27-1e a well being drilled for shallow gas is now at a depth of 180 feet. Comar Oil Co. is rigging up No. 1 Garret, NE cor NW SE, Section 31-27-2e preparatory to deepening. National Union Oil Co. & Marland Oil Co.'s No. 1 Glasgow, SW cor. NW, Section 6-26-1w in the Hubbard Pool is now drilling at 3,650 feet. Marland Oil Co. is building the rig for No. 1 W. Rupe, SW cor. NW, Section 10-25-2w in the Thomas Field.

The Texas Co.'s No. 6 Day, SE cor. NE, Section 20-29-1w North Braman area, had an initial production of 15 bbls. and a maximum of 1,040 bbls. from sand 3,381-3,450 feet and 3,450-3,520 feet. Carter Oil Co. & Ona Oil Co.'s No. 4 Shimp, NE cor. SW, Section 17-29-1e is producing 110 bbls. from sand 2,316-21 feet.

Comar Oil Co.'s No. 1½ McCullough, SW cor. SE, Section 5-28-1w was completed for 13,000,000 feet of gas from sand 1,564-78½ feet. Carter Oil Co.'s No. 1 Jameson, NE cor., Section 17-27-1w in the Blackwell Field an old well was deepened and completed for 6,000,000 feet of gas from the Wilcox sand 3,448-84 feet. Marland Oil Co.'s No. 4-A Fitzgerald, SE cor. NE, Section 1-26-2w in the Hubbard Pool has been completed in the Wilcox sand 3,600-44 feet. The maximum production was 2,275 bbls. and now doing 1,009 bbls. pinched in. No. 1 Diller, NW cor. SE, Section 12-26-2w is making 71 bbls. from the Wilcox sand 3,575-3,609 feet. No. 2 North (lease No. 2), NW cor. SW, Section 6-26-1w is pinched in and making 68 bbls. from the Wilcox sand 3,648-70 feet. No. 3 North, NW cor. SW SW, Section 6-26-1w is making 585 bbls. from the Wilcox sand 3,583-3,644 feet. The maximum production was 984 bbls. Skelly Oil Co. and others' No. 3 Becker, SE cor. SW, Section 28-25-1w in the Tonkawa Pool flowed 120 bbls. one day from the Wilcox sand 4,265-4,312 feet and has been abandoned at the total depth of 4,354 feet. The Texas Company's No. 4 Siler, SE cor SW NE, Section 28-25-1w is dry and abandoned at 4,330 feet.

Lincoln County

T. B. Slick has the rig on the ground for No. 2 Norton, NW cor. SW NE, Section 7-14-4.

Mid-Continent Petroleum Co.'s No. 1 Teter, NW cor. SW NE, Section 9-14-6 had top of sand at 4,550 feet and at 4,572 feet encountered water and was plugged back to sands 3,178-3,348 feet and after being shot is making 25 bbls. Wentz Oil Corporation's No. 1 Lukenbill, SW cor. SE, Section 34-17-2 is dry at 4,846 feet.

Logan County

Bu-Vi-Bar Petroleum Co.'s No. 1 Kirkpatrick, C SW, Section 12-15-1w is drilling at 1,000 feet.

Marshall County

Magnolia Petroleum Co. has abandoned No. 1 Walters, SE cor. NE SW, Section 17-5s-6.

Okfuskee County

Barnsdall Oil Co. has a rig on the ground for No. 1 Self, SW cor. SE NE, Section 21-13-9. E. L. Robinson's No.

(Continued on Page 93)

COWLEY COUNTY HAS 1,000-BBL. WELL LOST SPRINGS WELL DEEPENED

By J. L. Dwyer
Staff Correspondent, Kansas Fields

The deepening of the discovery well in the Lost Springs Pool of Marion County, the flooding of the Churchill Pool of Sumner County, and the completion of a 1,000-bbl. well in the State Pool of Cowley County were the major highs in the news of Kansas fields last week.

The discovery well at Lost Springs was drilled some time ago by Winters & Harwood and the Phillips Petroleum Co. and was No. 1 Razineck, SW cor. NW, Section 22-17-4. Corrected steel line measurement shows the sand record to be 2,386-2,409 feet. The well was drilled to a total depth of 2,417 feet, and the flow increased from 30 to 100 bbls. daily. This will give the Lost Springs play a greater interest.

The best well to be recorded in Kansas for some time was drilled by the J. A. Hull Co. in the State Pool north of the city of Winfield in Cowley County. It is No. 5 State, NE cor. SE NW, Section 15-32-4, which is flowing 1,000 bbls. daily from the siliceous lime found 3,266½-77½ feet. This is in the heart of the pool and emphasizes the fact that wells of huge output may be found in this area. The majority of wells thus far drilled in the pool have made good production by the swab and the air-lift, but flowing wells have been of rather limited output.

The famous Churchill Pool of Sumner County is situated on low ground and is subjected to flood waters which have impaired the output during the past week. As the most of the Churchill production is made on the swab, the high waters have made working impossible, and dams have been constructed in the hope of preventing a recurrence of this event. The Churchill production suffered 12,000 bbls. per day loss for four days of last week, and it is thought that by this week the waters will have receded and the yield will be back to normal.

In southwestern Butler County, Boyle & Grossman are drilling at 2,300 feet in No. 1 Smythe, SE cor. SW, Section 25-29-3. This well is being drilled in an effort to locate the trend of the famous Granite Ridge which produces at Churchill, and for this reason the well is rather important.

Butler County

Payne, McKenna and others have the rig up for No. 1 Unger, NE cor. NW SW, Section 30-26-4. Phillips Petroleum Co. made location for No. 1 Henry, SE cor. SW NE, Section 4-27-6.

White Eagle Oil & Refining Co.'s No. 1 Gray, SE cor. Lot 2, Section 31-26-8, is dry and abandoned at 2,790 feet after a shot of 40 quarts in sand at 2,700-11 feet. Rosenthal, Lassen and others' No. 3 Shaffer, NW cor. SW SE, Section 4-27-6, is good for 260 bbls. from sand at 3,153-60 feet. Phillips Petroleum Co.'s No. 1 Beedles, SW cor. SE NE, Section 8-27-6, is making 100 bbls. from sand at 3,145-49 feet. Empire Gas & Fuel Co.'s No. 5 Worrell, SE cor. NW SE, Section

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FIFTEEN COMPLETIONS IN MEXICO WITH 12,560 BARRELS INITIAL

By George Blardone
Staff Correspondent, Mexican Fields

TAMPICO, Mexico, April 4.—With 15 wells completed last week in Mexican fields, 6 can be placed in the production column, with new initial production of 12,560 bbls., most of which was finished in the south fields. The best well of the week is Huasteca Petroleum Co.'s No. 93 Tierra Blanca, south fields, which came in good for 10,000 bbls. at 2,033 feet. The same company's No. 77 is rated 1,000 bbls. at 1,942 feet.

In the northern fields the pay completions follow: Cia. Pet. Franco Espanola (Marland) No. 93 Limon is rated 400 bbls. at the shallow depth of 1,800 feet. The other pay completions belong to Mexican Petroleum Co. in the Ebano sector. They follow: No. 27 Mendez, rated 150 bbls. at 2,110 feet; No. 130 La Dicha, rated 1,000 bbls. at 1,970 feet. No. 16-H Caracol, rated 10 bbls. at 2,780 feet.

The failures follow: Northern fields: Mexican Sinclair Petroleum Co.'s No. 177, Lot 2 Cacalilao, drilled into salt water at 1,760 feet; Transcontinental Petroleum Co. did the same in its No. 68 Paciencia at 2,305 feet. American International Fuel Oil Co.'s No. 49 Los Esteros is a dry hole at 3,360 feet. Mexican Petroleum Co., Ebano sector, No. 154 La Dicha, dry at 2,720 feet; Nos. 28 and 34 Pedro, the same, at 2,130 and 2,220 feet; No. 18-H Caracol, dry at 2,260 feet.

In the south fields, Huasteca Petroleum Co.'s No. 20 Chapopote Nunez is dry at 2,504 feet; and Mexican Eagle Oil Co.'s No. 10 San Diego drilled into salt water at 1,865 feet.

Panuco-Cacalilao

Field operations in the Panuco-Cacalilao sectors of the northern fields are best reflected as follows: La Corona Petroleum Co.'s No. 82 San Manuel, the Panuco deep test, is in the Tamasopa at 4,182 feet; its No. 195, Lot 1 Cacalilao, is in lime at 2,020 feet. Cia. Pet. Francia Mexico, No. 21, Lot 4 Tanchicuin, is in lime at 2,004 feet; its No. 23, Lot 1 Lomas y Llanos is in shale at 1,120 feet; its No. 24 Las Piedras is in lime, showing oil at 1,910 feet; its No. 26 E. Maguabes is spudding. East Coast Oil Co.'s No. 233 Halcon is in gumbo at 185 feet. International Petroleum Co.'s No. 297, Lot 8 Cacalilao, is in gray lime at 1,750 feet; its No. 298, Lot 4, cemented 8-inch in gray lime at 1,203 feet; its No. 300, same, is in shale at 142 feet; its No. 303, Lot 8, is in shale at 155 feet; its No. 309, same, is in shale at 750 feet. Cia. Pet. Chileno Mexicano No. 42 Las Delicias is in gray lime, showing oil at 1,660 feet. Mexican Sinclair Petroleum Corp.'s No. 146, Lot 1 Cacalilao, cemented 8-inch in gray lime at 1,200 feet; its No. 149, Lot 2, has shut down for orders at 1,587 feet, gray lime, showing oil and much gas; its No. 173-A, Lot 2, cemented 8-inch in gray lime at 1,129 feet; its No. 178, Lot 2, is in gray lime at 1,525 feet; its No. 187-A is in shale at 180 feet; two more locations in Lot 2 are being rigged, and in its No. 14, Lot 2, W. Maguabes it has cemented 8-inch at 1,030 feet in gray lime. Mexi-

(Continued on Page 125)

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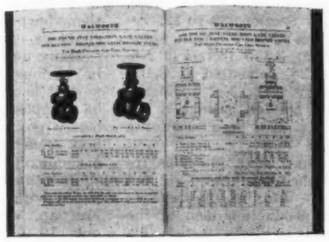

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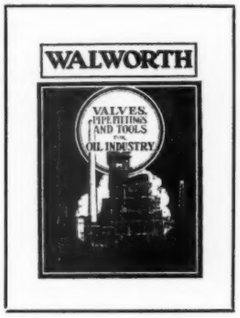

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Second Producer in Carterville Area

Louisiana Oil & Refining Co.'s No. 1 Blanton Flows 1,000 Bbls. of Fluid, About One-Half of Which Is Oil

By Neil Williams
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Apr. 11. — The Carterville area of northern Bossier Parish, Louisiana, again occupied the limelight in North Louisiana-Arkansas field operations the past week with the bailing in of its second producing well. With this exception the week in this division was unusually quiet, furnishing little of importance above routine field work.

The Carterville area, however, offered oil operators of North Louisiana and Arkansas plenty of interest for the time being. The bailing in of Louisiana Oil & Refining Corp.'s No. 1 Blanton, flowing 1,000 to 1,200 bbls. of fluid, about half of which was oil, was a particularly favorable development in placing that field on the map as an oil producer.

This well, which is in Section 23-23-12, is from three-quarters of a mile to 1 mile southwest of the original oil producer, the Woodley and Collins and Atlantic Oil Producing Co.'s No. 2 L. and A., Section 14-23-12, which is flowing about 200 bbls. of fluid, 80 per cent salt water.

The bailing in of the latter well several weeks ago stimulated hopes of operators that there would be an important oil pool in northern Bossier Parish, but developments since then until the bailing in of the Louisiana Oil Refining Corp.'s well have been none too favorable for the opening of a commercially oil productive field.

The completion of Bethany Oil & Gas Co.'s No. 1 Dodson, Section 16-23-12, only last week as a 15,000,000-foot gasser and running almost true to form with the first two wells in the district which came in as heavy gas producers making 35,000,000 to 40,000,000 feet of gas each, was especially unfavorable.

Revived Hope for Oil

The latter well had a showing of oil but it being a gasser led to the opinion that the best Carterville could expect commercially was gas. The Louisiana No. 1 Blanton, however, has indicated the further presence of oil in that vicinity which is resulting in another revival of interest in that district.

The Louisiana Oil Refining Corp.'s No. 1 Blanton is approximately a mile southeast of the Bethany Oil & Gas Co.'s No. 1 Dodson gasser. It is not quite a mile southwest of Woodley and Collins' No. 2 L. and A., the oil producer. The two original wells, Woodley and Collins' No. 1 Robertson, Section 22-23-12, and the Bahan and Amerada Petroleum Corp.'s No. 1 Mays, Section 27, both of which are large gas producers, are west and southwest of the Louisiana well. All these wells are producing from the Woodbine sand, ranging in depth from 3,081 to 3,092 feet.

Ever since the Woodley and Collins No. 2 L. and A. was bailed in spraying oil, eyes of the oil industry here have been turned on the Carterville area as a promising oil field. While many have thought this well was a "freak" and that it did not indicate a commercial producer and that Carterville was only a gas field other authorities have held to the opinion that the well was on the edge of a pool somewhere in that section. The Louisiana well has indicated that bigger production lies to the south and southwest of the Woodley and Collins well.

One of the serious stumbling blocks in the way of the Carterville Field is the salt water. However, many hold the theory that the salt water is not from the sand itself but is leaking from above and can be shut out. The Woodley and Collins wells are making as high as 80 per cent salt water and the Louisiana well 50 per cent.

Until Sunday, however, the Louisiana's No. 1 Blanton had been opened only for two 15-minute periods and as a result there still is uncertainty as to what it will do but operators and scouts who heretofore have been skeptical of Carterville now are expressing opinion that considerable oil may be produced in that district. The field, though, has the earmarks of other fields, particularly Cotton Valley, in that part of the state. The Louisiana well also is estimated good for 30,000,000 feet of gas. The oil is 32 gravity.

Pleasant Hill Promising

Other districts of Arkansas and North Louisiana produced no developments of interest. The Pleasant Hill area of northern Sabine Parish is promising something for the coming week, but at present it is only marking time. With Carterville and Richland Parish, Louisiana, and Lawson-Urbana, Arkansas, this is one of the four wildcat districts of importance in the North Louisiana and Arkansas division.

Operators for two weeks have been awaiting the testing of three wells of the Arkansas Fuel Oil Corp. which will determine to a large extent the possibilities of the Pleasant Hill and Sabine Parish district for oil production. These wells are No. 3 Logan, Section 33-10-12, cemented at 3,105 feet; No. 4 Logan, same section, cemented at 3,155 feet, and No. 5 Logan, Section 28, cemented at 3,108 feet. The discovery well, No. 1 Logan, was bailed in as a 500-bbl. producer, but production of this has been declining steadily.

It is reported that legal questions regarding titles of the Arkansas Fuel Oil Co.'s properties are delaying the testing; but, according to production men of the company, the wells will be tested this next week and the commercial extent of the district determined. The east limits of the field, however, already have been determined to some extent by the Ohio Oil Co.'s No. 1 Cook Land Co., in Section 34, which was dry at 3,414 feet. This test failed to find the oil sand on which the Arkansas Fuel Oil tests are cemented.

Floods Curtail Work

Following another reduction in Oklahoma and Texas crude prices, operators here had been looking for a cut in North Louisiana and Arkansas prices, but nothing had materialized Saturday. Although the situation locally continues in good shape, there is considerable uncertainty here and operations to a large extent are at a standstill. Coupled with the market situation, floods in southern Arkansas fields and in Smackover have curtailed work there, and from a general production viewpoint times in this division are about as dull as ever before.

Many new operations are being started in various districts, but for the most part it is anticipated that these will not be completed before markets are in a better position. From this angle there may seem to be a little more activity for a summary of the week's operations will show that there were 36 derricks compared with 33 of the previous week; 23 rigs up, while a week ago there were only 19. However, only 201 wells were reported drilling as against 208 of the previous week. There were 25 completions during the week, of which 14 were abandoned tests.

Arkansas fields got two fairly good producers during the week in the Gulf Refining Co.'s No. 10 Bennett, Section 33-15-15, Ouachita County, and the Lion Oil & Refining Co.'s No. 6 Hardy-Murphy, Section 9-16-15, Union County. Both are in the Nophlet area of Smackover, the former pumping 150 bbls. daily from 2,364 feet, and the latter 40 bbls. daily from the 2,712-foot level. These, being in proved territory, offered little out of the ordinary.

Production Drop

However, despite some curtailment of

Eight Seismographs in East Texas

Magnolia Has Interesting Showing 5 Miles Southeast of Gallatin, in Cherokee County

By Special Correspondent

CORSICANA, Tex., Apr. 9.—The Humble Oil & Refining Co.'s No. 1 Earl & Ragsdale, west of Jacksonville, Cherokee County, on the Boggy Creek Dome, which is believed to be good for from 8,000 bbls. a day upwards, is still shut in.

The Roxana Petroleum Corp. has four seismographs at work in the Butler Dome area in Freestone County and Anderson County; the Gulf Production Co. has two in the Brooks Dome area in Smith County, and Humble Oil & Refining Co. has two working in the Anderson Smith and Van Zandt area. Meanwhile, the blocking of acreage in several counties in the east central area is going on unabatedly, most of the big Texas operating companies participating.

The Magnolia Petroleum Co. has an interesting showing in its test on the Summers land, Brewer Survey, about 5 miles southeast of Gallatin, Cherokee County. Sand was cored from 4,328 to 4,334 feet. It was well saturated with a low-grade, black, dead-looking oil apparently of asphalt base. It is not known what sand this is. If it is Woodbine, it is about 900 feet high, as the Woodbine was believed to lie at about 5,200 feet in that part of the territory.

Two Failures

In Navarro County, Zoch and others have abandoned their test on the Maddox land, Varella Survey, at 3,253 feet. It was dry all the way. The Austin chalk, marker for this area, was found at 2,633 to 3,088 feet, which was low.

Cranfill Brothers have abandoned their No. 1 G. W. Foster, Margaret Neal Survey, Van Zandt County, was dry and abandoned at 3,708 feet. The bottom was sticky shale.

The Texas Company has started a new test on the Williams land, Ben Roberts Survey, 5 miles west of Emhouse, Navarro County, and was last reported drilling at 700 feet.

Butler Dome, Freestone County

The Texas Company owns about three-quarters of the Butler Dome in Freestone County. The Gulf Production Co. and the Humble Oil & Refining Co. own leases on the remaining portion of the dome. Alexander & Liles own about 7,000 acres on the south and southwest flank and have also made a deal for about 1,200 acres on the southwest flank on which they have contracted to drill a well within six months. Most of this latter block is in one tract known as the Boyd farm. The lease is said to have cost the firm $20 per acre, which does not include the cost of the first well. Just how they will handle the financial side of the drilling of the initial well is not known, but it is believed they will sell enough of the acreage to pay for the initial drilling. Alexander & Liles are known as a reliable firm and good oil men. The Gulf Production Co. owns the acreage on both the north and south sides of the Alexander & Liles block.

The Atlantic Oil Producing Co., Roxana Petroleum Corp. and one other company believed to be the Marland Oil Co. of Texas, have "shooting" crews working the area with seismographs.

Palestine Dome, Anderson County

The bulk of the acreage on the Palestine Dome in Anderson County is owned by The Texas Company, Gulf Production Co. and Humble Oil & Refining Co. There is some open acreage, but it has been held at somewhat high prices, from $70 down to $30 per acre, according to location. This is one of the known domes that has been used by geologists for a great deal of observation and work. Practically all the formations outcrop, some of these being the Austin chalk, the Eagleford shale and the Woodbine sand. There has been some test drilling done on this dome.

Keechi Dome, Anderson County

The Humble Oil & Refining Co., Navarro Oil Co., Sun Oil Co., Gulf Production Co., the Texas Company and Pure Oil Co. are the major owners of acreage on the Keechi Dome. The Sun has a one-third interest in the acreage of the Navarro Oil Co. Years ago the Texas Company drilled five tests on this dome, all resulting in salt wells.

The Navarro Oil Co. drilled five tests last year in a north and south direction, all salt wells. The test work developed that the dome was more extensive than had been estimated. Rosser & Cosden drilled two deep wells practically offsetting each other on the northwest flank of the dome about 2½ miles northwest of the salt wells. This led to the opinion that a fault and not a dome existed there. Cosden and his associates have been working to extend their block and are expected to drill a well between their dry holes and the dome proper. Prices for open acreage are pretty high.

The Salmon area in southern Anderson County, centering around the town of Salmon, is not a known dome but the Gulf, Humble and Texas companies have blocked the area with a view of prospecting it.

The Posey area is about 10 miles east of Palestine, along the Neches River. It is practically all owned by the Humble Oil & Refining Co. It is a part of the big acreage leased by the Humble from the Southern Pine Lumber Co. This was first played by the Humble as a sub-

(Continued on Page 84)

operations, production of the North Louisiana-Arkansas division dropped only 565 bbls. during the week. This reduction was due to the Smackover Field. Yet, due to the present flooded condition of that district, a substantial decline is in store for next week.

Production by fields during the week was:

North Louisiana	
Caddo light	9,820
Caddo heavy	5,350
Homer	5,250
Haynesville	7,900
DeSoto and Red River	4,250
Elm Grove	660
Bellevue	1,640
Cotton Valley	6,080
Urania	11,300
Total	52,250
Arkansas	
El Dorado	6,160
Lisbon	4,560
Smackover light	11,590
Smackover heavy	97,120
Stephens	1,330
Nevada	1,500
Bradley	150
Total	122,410
Total both states	174,660
Total last week	175,225
Loss	565

Bossier Parish

Gulf Refining Co. is bailing No. 6 Hodges, Section 24-16-12, Elm Grove district, to make a test of sand at 1,900 feet. The only other test in this area is The Texas Company's No. 14 Caplis, same section, which has 6-inch casing cemented at 1,545 feet. Palmer Corp. has abandoned No. 3 Bossier, Section 9, at 3,832 feet.

In the Bellevue area, Humble Oil & Refining Co. has set 15½-inch casing at 503 feet in No. 30 Bliss & Wetherbee, Section 15-19-11.

Caddo Parish

Bahan & Bahan have cemented the 6-inch casing at 911 feet in No. 2 Wilburn, Section 4-17-16, Waskam district. The 10-inch plug was drilled out at 100 feet in this test. Standard Oil Co.'s No. 1 Trosper, Section 34-18-16, also in the Waskam area, is drilling gummy shale at 2,730 feet.

In the 21-16 district, L. A. Berston is drilling at 985 feet in No. 6 Murff, Section 12. W. D. Chew has a derrick up for No. 5 fee, Section 33. Galloway and associates are bailing No. 1 Smith, Section 15, to make a test at 2,330 feet. Standard Oil Co. has a derrick up for No. 180 Stiles, Section 33, and in No. 181 Stiles, same section, is drilling out the 6-inch plug at 1,800 feet.

Bethany Oil & Gas Co. is fishing for a drill stem at 2,200 feet in Section 1-20-16 in No. 1 Offenhauser. Burford and associates have set a short string of 4½-inch casing at 2,115 feet in No. 1 Dambley, Section 2. W. W. Dobson and associates' No. 4 Rives, Section 5, is dry at 1,877 feet and is shut down waiting orders. Gulf Refining Co. is bailing No. 266 Ferry Lake, Section 28, to make a test at 2,260 feet. No. 267 Ferry Lake, same section, is waiting on a standard rig at 2,346 feet. The same company has a derrick up for No. 268 Ferry Lake in Section 22. The Texas Company is drilling out the 6-inch plug at 2,282 feet in No. 1 Hardy, Section 10.

Magnolia Petroleum Co. has completed No. 17 Doan-Thigpen, Section 6-20-15, pumping 7 bbls. of oil. In Section 27, the Falcon Drilling Co. is rigging up for a test at No. 1 Schmidt. M. I. Morgan is drilling at 1,820 feet in No. 8 Glassell, Section 10, while in Section 15, the Simplex Oil Co. has a derrick up for No. 2 Schmidt. Bussa & McGoldrick have a derrick up for No. 6 Beckham, Section 26-21-15. In Section 13, Dixie Oil Co. is making a Halliburton test at 3,663 feet in No. 2-A Noel. The same company is drilling No. 86 Robertshaw, Section 14, at 860 feet, and is coring at 3,843 feet in No. 10 Slattery, Section 27. Magnolia Petroleum Co. has cemented the 6-inch casing at 1,385 feet in No. 20 Dillon, Section 23. In No. 20 Robertshaw, same section, it is drilling at 3,264 feet. The Texas Company is arranging to test No. 47 Caddo M. L. Co., same section, at 3,628 feet. Tholl Oil Co., in Section 31, has started operations at No. 3 Muslow and has cemented the 8-inch casing at 200 feet. In the same section Thomason and associates are drilling at 2,200 feet in No. 7 Muslow.

Fishing Job

Big Lake Oil Co. is fishing the wash pipe at 3,003 feet in No. 1 Rodessa, Section 23-23-16. Gilliam Syndicate is bailing No. 1 Taylor, Section 17-21-14, to make a test at 914 feet. Magnolia Petroleum Co. has cemented the 4½-inch casing at 2,167 feet in No. 4 Planters, Section 7. In Section 26-18-16, A. C. Glassell is setting the 8-inch casing at 874 feet in No. 1 Thigpen & Herold. H. M. Hancock is to standardize No. 1 Hampton, Section 8-19-16, at 1,700 feet and is waiting on a standard rig. In Section 22, Marshall Natural Gas Co. has a derrick up for No. 1 Sharp.

Ohio Oil Co. is drilling at 1,716 feet in No. 1 Moodie Fortner, Section 5-22-16. Standish Oil & Refining Co. is drilling at 980 feet in No. 11 Allen, Section 22-22-15. The Texas Company's No. 5 Herndon, Section 14-15-21, which blew in two weeks ago, caught fire and burned a week, has been placed under control and is making about 40,000,000 feet of gas and 400 to 500 bbls. of salt water and no oil. This well blew in from the Trinity horizon at 3,590 feet.

LaSalle Parish

Wingfield and associates have a derrick up for No. 1 Gibson, Section 2-9-12, Urania district. In Section 7-10-2e, same field, Modisette Drilling Co. has abandoned as dry at 1,530 feet. No. 4 Urania. Wingfield and associates' No. 6 Urania, Section 2-9-1e, is shut down at 1,450 feet. Ayers Brothers and Tremont's No. 4 Tremont, Section 30-10-2e, also is shut down at 600 feet.

Monroe District

There were two completions in the Monroe district during the week. One was Easterling and associates' No. 1 Sicard, Section 18-18-4e, Ouachita Parish, making 1,500,000 feet of gas at 2,243 feet. The other was Ouachita Natural Gas Co.'s No. 8 Allison, Section 7-20-5e, Morehouse Parish, making 2,500,000 feet of gas at 2,221 feet. In the latter parish, Consolidated Carbon Co. is drilling at 600 feet in No. 1 White, Section 16-20-4e. Louisiana Development Co. is drilling shale at 1,875 feet in No. 38 fee, Section 21-20-5e. In Section 16, Natural Gas Producing Co. has cemented 8-inch casing at 924 feet in No. 1 Hardy. The same company has a derrick up for No. 20 Crossett, Section 21-23-7e. United Carbon Co. is fishing for a drill stem at 2,000 feet in No. 1 Townsend, Section 29-21-5e.

In Ouachita Parish, Consumers Gas Co. has a rig up for No. 1 Williams, Section 10-18-5e. Jordon Drilling Co. has cemented 6-inch casing at 2,195 feet in No. 1 Moore, Section 18-18-4e, Ladell Properties, Inc., is drilling at 1,265 feet in No. 39 fee, Section 1-19-4e. Louisiana Gas Producing Co. is drilling at 1,995 feet in No. 5 Dewdrop, Section 20-20-5e. The 8-inch plug was drilled out at 900 feet and the 12½-inch plug at 197 feet. The Palmer Corp. has a rig up for No. 4 Millsaps, Section 25-19-2e.

In Union Parish, C. E. Camette has shut down No. 1 Tuguire, Section 21-22-15, with depth at 1,525 feet. R. W. Rhodes is drilling in chalky lime at 2,385 feet in No. 1 Hutch, Section 28-23-2. Ruston Drilling Co. has cemented 6-inch casing at 2,101 feet in No. 1 Gulley, Section 16-20-4e. United Carbon Co.'s No. 1 Rayburn, Section 28-21-4e, gauged 9,936,000 feet of gas at 2,140 feet.

Webster Parish

Woodley Petroleum Co.'s No. 1 Cox, Section 22-21-10, has been completed as a 3,000,000-foot gasser at 4,475 feet. S. A. Lane and associates are reaming down No. 1 Roberts, Sectoin 20-19-10, to set the 8-inch casing at 1,291 feet. Total depth is 2,634 feet. Louisiana Oil Refining Corp. is drilling out the 6⅝-inch plug at 4,200 feet in No. 1 Davis, Section 23-21-10.

ARKANSAS

Union County

Lisbon area: Brown and associates have a rig up for No. 1 Slaughter, Section 2-17-16, Lisbon Pool.

Louann area: W. H. Gilliland is drilling out the 6-inch plug at 2,527 feet in No. 1-B Hodges, Section 1-16-17. Magnolia Petroleum Co. is drilling at 2,100 feet in No. 2 Crawford, Section 8-16-16. The same company's No. 3 Freeman, Section 7, is being drilled at 1,526 feet. No. 4 Saxon, Section 5, is waiting on a standard rig at 2,260 feet with 150 feet of oil in the hole. In Section 21, the same company has a rig up for No. 1 Union Lumber Co. National Consolidated Petroleum Co. is bailing out No. 2 Fagg, Section 8, to make a test of sand at 2,628-39 feet. Arkansas Fuel Oil Corp. has abandoned the location for No. 8 La Grone, Section 1-16-17.

Norphlet: Lion Oil & Refining Co. has abandoned No. 7-C Bilyew, Section 8-16-15. In Section 9, the same company's No. 6 Hardy-Murphy has been completed pumping 40 bbls. of oil from sand at 2,692-2,712 feet. Natural Gas & Fuel Corp. has abandoned No. 4 Flenniken, Section 8-16-15. It was at a depth of 2,765 feet. The same company is drilling No. 4 Bilyew, Section 9, at 2,000 feet. In Section 16-16-16, J. J. O'Brien has a derrick for No. 1 Saxon. Ohio Oil Co. is arranging to test sand at 2,691-2,713 feet in No. 4 Murphy, Section 9-16-15. In the same section Peer Oil Co. is arranging to core drill No. 1-B Palmer. Total depth of the hole is 2,418 feet. Roxana Petroleum Corp. is sand pumping at 2,601 feet in No. 3-A Flenniken, Section 10. Simms Oil Co. has started operations at No. 1 Crawford, Section 14-18-13, and is at 595 feet, having drilled out the 12½-inch plug at 238 feet. Stewart and associates are drilling No. 8 Murphy, Section 9-16-15, at 2,600 feet. Sunny Jim Oil Co. has pulled the 6⅝-inch casing in No. 4 Flenniken, same section, and is skidding the derrick 50 feet north. Superior Oil Co.'s No. 2 Cordell, Section 5-18-13, is being core drilled at 2,961 feet. It tested salt water at 2,911 feet.

El Dorado Pool: Mountz and associates are drilling at 940 feet in No. 6 Pratt, Section 8-18-15.

Ouachita County

Gulf Refining Co. has completed No. 10 Bennett, Section 33-15-15, Norphlet area of the Smackover Field, pumping 150 bbls. of oil from sand at 2,358-64 feet. In the same section, No. 11 Bennett has 10-inch casing at 297 feet. Sunny Jim Oil Co. is drilling at 4,249 feet in hard lime in No. 12 Berry, also same section. In Section 31, the Texas Pacific Coal & Oil Co.'s No. 9 Laney is waiting on a standard rig at 2,570 feet. The 6⅝-inch casing has been cemented at 2,565 feet and there is 1,800 feet of oil in the hole. The Unity Petroleum Co. will try to pump No. 8-A Umstead, Section 33. It had 800 feet of salt water and a show of oil at 2,388 feet. Imperial Oil & Gas Co. is arranging to drill in with standard tools, No. 9 McClanahan, Section 8-16-15. Depth is 2,656 feet. Marine Oil Co. has cemented 6⅝-inch casing at 2,356 feet in No. 11 Umstead, Section 5-16-15. Unity Petroleum Co. will abandon No. 1 Murphy, Section 2-16-15. It tested 1,500 feet of salt water at a total depth of 2,676 feet.

In the Louann Pool, Coppenhaven and associates have a rig up for No. 3 Berg, Section 13-15-17. Middlesex Oil Co. has a rig up for No. 5 Shirey, Section 36.

In Stephens operations, Magnolia Petroleum Co. is drilling out the 8¼-inch plug at 1,543 feet in No. 2 Gosden, Section 15-15-9.

Nevada County

Humble Oil & Refining Co. has cemented the 6⅝-inch casing at 3,580 feet in No. 4 Bodcau, Section 9-15-22. It has sand at 3,601-06 feet.

LAWSON-URBANA WILDCAT WELL FLUID 98 PER CENT SALT WATER

By Neil Williams

Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Apr. 11.—Outside of the Carterville area of northern Bossier Parish of Louisiana, in which the second oil producer and a gas well were completed, wildcatting was at a standstill in the North Louisiana-Arkansas division the past week.

The bailing in of Louisiana Oil & Refining Corp.'s No. 1 Blanton, Section 23-23-12, flowing an estimated 1,000 to 1,200 bbls. of fluid, 50 per cent salt water, and making approximately 30,000,000 feet of gas, and the completion of Bethany Oil & Gas Co.'s No. 1 Dodson, Section 16, as a 15,000,000-foot gasser, were the Carterville developments.

A Lawson-Urbana wildcat well, the Simms Oil Co.'s No. 1 Ballard, Section 9-18-13, Union County, Arkansas, was completed pumping 300 bbls. of fluid, but 98 per cent of this was salt water. This was not an especially favorable development in this area.

The only other wildcat completion which was not dry was the Sligo Syndicate's No. 1 Webb, Section 24-17-12, Bossier Parish, Louisiana, which is making 13,000,000 feet of gas. Eight wildcat tests were abandoned, among which was the Ohio Oil Co.'s No. 1 Cook Land Co., Section 34-10-12, northern Sabine Parish.

Richland Parish, Louisiana, another of the four lately discovered wildcat districts in this division, was not in the limelight at all during the week, and operations were only routine drilling. Sabine Parish is only marking time.

The Arkansas Fuel Oil Co. has abandoned No. 1 Duty, Section 11-19-25, Lafayette County, Arkansas. It showed salt water at 2,842 feet. This is in addition to completions in the detailed field operations.

Wildcat operations during the week were:

NORTH LOUISIANA

Bienville Parish

B. P. Borden has drilled out the 12½-inch plug at 210 feet in No. 1 L. & A., Section 9-15-7, and is at a depth of 500 feet.

Bossier Parish

Of four wildcat completions in Bossier Parish during the week three are producing either gas or oil. The Bethany Oil & Gas Co.'s No. 1 Dodson, Section 16-23-12, Carterville area, is estimated at 15,000,000 feet of gas with a showing of oil at a depth of 3,091 feet. It is shut in. Louisiana Oil Refining Corp.'s No. 1 Blanton, Section 23, is estimated good for 30,000,000 feet of gas and 1,000 to 1,200 bbls. of fluid daily, of which about half is salt water. It is producing from sand at 3,086-3,092 feet. Sligo Syndicate's No. 1 Webb, Section 24-17-12, is estimated at 13,000,000 feet of gas from sand at 2,392 feet. Harrell Drilling Co. has abandoned No. 1 Atkins, Section 2-18-12, at a total depth of 1,220 feet.

Clark and Norten's No. 1 Ford, Section 32-23-13, is being drilled at 2,660 feet. John Glassell, jr., and associates are drilling No. 1 Gibson-Tiger, Section 14-21-14, at 600 feet. Magnolia Petroleum Co.'s No. 1 Dodson, Section 15-23-12, Carterville area, is in shale at 2,638 feet. In Section 9-16-11, the Palmer Corp. has a rig up for No. 4 Bossier. L. & L. S. Co. W. R. Ramsey has a rig up for No. 1 Dodson estate, Section 16-23-12, Carterville, and is building a derrick for No. 1 Robertson, Section 22-23-12, same field. Simms Oil Co. is core drilling No. 2 Sandidge, Section 5-18-11. Total depth is 1,672 feet. Sligo Syndicate is rigging up for No. 1 Jeter, Section 23-17-12. Triangle Drilling Co. and W. D. Perritt are coring at 2,509 feet in No. 1 Levy, Section 13-20-14. Tubbs and associates have shut down No. 1 Jacobs, Section 26-20-13, at a depth of 1,910 feet.

Caldwell Parish

Southern Crude Oil Purchasing Co. has abandoned as dry at 1,000 feet No. 7 Caldwell Lumber & Timber Co., Section 2-11-5e. Humble Oil & Refining Co. also

(Continued on Page 132)

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Production in Coastal Pool Declines

For First Time Since Spindletop Deep Sand Was Opened New Output Less Than 500 Bbls.

By P. L. McGreal
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Apr. 11.—Wells completed in the coastal pools during the week of April 9 number 24, or just double the number during the previous week. The new production is 10,265 bbls. or 6,745 bbls. less than during the previous seven-day period. Five of the completions were dry and three salt water holes, leaving 16 net producers. Five tests are bailing at the end of the week.

For the first time since the deep sand section at Spindletop was opened 15 months ago, the new production there is less than 500 bbls. Five wells were finished there, two being recorded as dry and one as a salt water well. Two more are bailing and these may change the record early next week.

The estimated daily average gross production of the coastal pools for the week of April 9 is placed at 147,287 bbls., a decrease of 2,058 bbls. compared with last week.

The gross estimate for each pool is as follows:

Pool—	Daily Av.
Boling	1,870
Batson	1,390
Blue Ridge	3,350
Barber Hill	1,300
Big Creek	5,500
Dayton	40
Damon Mound	955
Edgerly (La.)	660
Goose Creek	7,750
Hull	16,150
Humble	4,175
High Island	450
Jennings (La.)	1,030
Lockport	6,600
Markham	750
Nash	900
Orange	6,185
Orchard	42
Pierce Junction	7,750
Piedras Pintas	125
Spindletop	53,000
Saratoga	1,165
Sour Lake	4,875
South Liberty-South Dayton	3,650
Stark (La.)	1,450
Vinton (La.)	5,695
Welsh-Anse La Bute (La.)	60
West Columbia	10,120
Miscellaneous	1,300
Total	147,287

*Includes Nacogdoches, Washington and Kleberg Counties in Texas; Cameron, Calcasieu and Iberia Parishes in Louisiana. The South Louisiana pools are credited with 15,945 bbls. of the gross, an increase of 665 bbls. over last week.

Southwest Fields

The estimated daily average gross for the southwest Texas fields is placed at 36,930 bbls., an increase of 100 bbls. over the week of April 2. The figures for each field are as follows:

Field—	Daily Av.
Luling	18,100
Laredo (Mirando)	14,070
Somerset	1,200
Calliham	40
Rockdale-Minerva	970
Lockhart (Lytton Springs)	2,300
Miscellaneous	250
Total	36,930
Grand total for week	184,217
Grand total last week	186,175
Net decrease	1,958

Wells Completed or Bailing

In the Orange Pool, the Atlantic Oil Producing Co.'s No. 2 Moore was abandoned in salt water at 3,350 feet. The Gulf Coast Oil Co.'s No. 5 Leon is pumping 25 bbls. at 3,300 feet. The Brownie Babbittee Oil Co.'s No. 12 McLean is making 165 bbls. of fluid, 40 per cent water, at 4,000 feet. The Tillery Oil Co.'s No. 2 State Land in Cow Bayou, credited last week with 1,200 bbls. initial flow at 3,300 feet, is now flowing 500 bbls., 8 per cent water. The Rex Petroleum Co.'s No. 4 Carbello is flowing 1,100 bbls. of fluid, 70 per cent salt water, at 3,900 feet.

The Empire Gas & Fuel Co. got a 1,500-bbl. well in its No. 24 Barngrover on the south flank of the dome at Hull at 3,120 feet. The Gulf Production Co.'s No. 63 Phoenix is flowing 600 bbls. by heads at 3,300 feet. The Humble Oil & Refining Co.'s No. 1 Merchant, deepened to 4,150 feet, will make a pumper.

The Texas Company's No. 4 Simms in the old section of the South Liberty Pool, is a salt water hole at 3,550 feet. The Gulf Production Co.'s No. 1 Palmer on the west side of the Trinity River in the deep sand area, is bailing at 3,700 feet.

In the High Island section of Galveston County, the Gulf Production Co.'s No. 7 Smith on the south flank of the dome, was completed at 2,707 feet, with the strainer set in 27 feet of sand. The well started heading 200 bbls. and increased to 400 bbls. The Sun Oil Co.'s No. 11 Lockhart bailed salt water and is deepening.

Small wells are the rule in the Hardin County pools. S. R. Buchanan's No. 92 Milhome in the Batson Pool is a 10-bbl. pumper at 1,325 feet. The Gulf Production Co.'s No. 65 Choate is bailing at 1,150 feet.

The same company's No. 4 Ebberts in the Sour Lake Pool is a 10-bbl. well at 3,900 feet.

The Sun Oil Co.'s No. 174 Texas Crude lease at Saratoga bailed dry at 725 feet.

In the Goose Creek Pool, the Gulf Production Co.'s No. 24 Beaumont will make a pumper at 2,700 feet. It is on the shore of the bay. The Humble Oil & Refining Co.'s No. 32 Galliard Peninsula bailed dry at 4,600 feet and was abandoned.

The Rycade Petroleum Corp. is setting strainer in No. 13 Wisdom in the Nash Pool on the line of Brazoria and Fort Bend Counties, to bail at 3,680 feet. Most of the producers there are from 400 to 600 feet deepr.

The Gulf Production Co. deepened No. 22 Davis in the Big Creek Pool in Fort Bend County to 4,370 feet and it came in flowing 4,400 bbls. initial.

South Louisiana Completions

In the Lockport Pool, near Lake Charles, Calcasieu Parish, the Vacuum-Gulf companies' joint No. 7 Miller, deepened to 4,439 feet, came in flowing 1,500 bbls. of fluid, 50 per cent salt water. No. 8 Miller, also deepened, responded flowing 2,500 bbls. of fluid, 75 per cent water, at 4,428 feet. The same interests' joint No. 4 Bordages is making 200 bbls. of fluid, 40 per cent salt water, at 4,900 feet. Joint No. 2 Friedberg & Wolf will pump at 4,350 feet.

In the Vinton Pool, the Gulf Refining Co.'s No. 67 G. N. G. is flowing 800 bbls. at 2,400 feet. The Colorado & Louisiana Oil Co.'s No. 3 Johnson is heading 500 bbls. at 2,000 feet.

On the northwest side of the Pierce Junction Dome, 8 miles south of Houston, the Rio Bravo Oil Co.'s No. 2 P. F. was completed at 4,458 feet flowing 1,200 bbls initial.

The Humble Oil & Refining Co. and Valley Oil Co. have several interesting wildcats in Austin County, which is inland about 125 miles from the Gulf Coast. Geophysical tests by the Pure Oil Co. are said to have located a saline dome at Pilant Lake, Fort Bend County, between Big Creek and Damon Mound. Another salt dome is reported discovered in Chambers County at what is known as the Cove on Trinity Bay. Testing with the seismograph, which involves the use of dynamite to cause artificial tremors over and around a suspected elevation on the prairies, is general and the explosions are so common in the coastal region they no longer attract attention.

The torsion balance is also in general use, but its operations and deductions are more complicated and require the services of trained specialists. The seismograph theory is more readily understood by the average layman.

If the findings of the instruments spell a saline uplift, shallow holes are drilled with light portable rotary rigs to corroborate the instruments. If salt is found then heavy rigs are installed and efforts made to find the oil-bearing sands that lie banked up against the salt. Leasers block up acreage running into thousands of acres and thus these domes can be developed leisurely if the oil sands are found. No more flocking of lease speculators, scouts, independent operators and supply men to the new "strike." No more rushes and the attendent excitement over the finding of a new pool. All that is ancient history in the Gulf Coast region.

Testing Operations

In the Raccoon Bend district in the northeastern part of Austin County, where the Humble Oil & Refining Co. and the Valley Oil Co. are drilling jointly on a block of 30,000 acres, blocked up by Harry Pennington, No. 3 Austin College is testing 12 feet of sand at 970 feet, showing 18 gravity oil. The well is being blown with an air compressor. Three more shallow tests are showing oil in sands at 981 feet and 1,063 feet. They are No. 2 Thompson and No. 2 Washington. The former was deepened from 915 feet where it was a gasser. No. 2 Reese bailed some oil at 1,000 feet, but it is now deepening around 1,100 feet. These tests were drilled with light gasoline portable rigs. No. 1 Bellville school lands is being drilled with a heavy steam rig at 1,854 feet to be a deep test. The district attracted attention in February when No. 1 Walton blew in as a gas well around 860 feet. The gas from the well is being used as fuel. Locations have been made for Nos. 1 Deutser and 1 Woodley. The development work embraces an area of about 2 square miles. At Hickory Mound, R. E. Graves' No. 1 Cleveland is idle at 1,600 feet. Mewis and others' No. 1 Mewis, 3 miles north of Bellville, is around 700 feet.

Fort Bend County, Long Point Dome: Gulf Production Co.'s No. 2 Trone on the west flank of the Long Point Dome, between the Big Creek and Damon

(Continued on Page 128)

LEASING OPERATIONS IN LEA COUNTY SOUTHWARD TOWARDS TEXAS LINE

By Special Correspondent

ATESIA, N. Mex., Apr. 9.—Major oil companies continue to buy all available acreage in the southern part of Lea County, trying to get as close to the Texas line as possible. The record books of the county show that practically all acreage in this area is owned by the big companies, with the Marland Oil Co. owning the greatest amount, having purchased considerable acreage checkerboarded during the past week.

The Texas Company is now drilling on its No. 1 Rhodes permit well in Section 22-26-37, 2 miles north of the state line. This company is also spudding in its No. 1 Lucy Robinson well in Section 25-16-31 and rigging up on No. 1 Jackson permit in Section 4-20-34. Several other locations will probably be made by this company within two weeks.

The Marland Oil Co. is also expected to make several additional locations, having drilling contracts on government permits. This company's No. 1 Hale in Section 11-20-30 topped the salt at 490 feet and is now drilling below 1,250 feet. The joint operation of the Ohio Oil Co. and the Marland company on the Workman permit in Section 13-22-29, is drilling below 2,500 feet. East of these tests the Covert No. 1 State well in Section 15-21-33 is drilling in salt which was topped at 1,960 feet.

The Cap Rock Oil & Gas Corp. is also drilling in the salt in its No. 1 Leonard Levers in Section 11-16-32 at a depth of 1,450 feet, this being topped at 1,011 feet.

South of this well, the Ingelfield Bridges No. 1 State in Section 4-17-34, is drilling at 4,767 feet. This well has swabbed around 100 bbls. which failed to lower the fluid noticeably. This is standing better than 4,000 feet in the 8¼-inch casing.

Magnolia's Production

The Maljamar Oil & Gas Corp.'s No. 1 Grace Mitchell is running tubing and the well will be put on the pump within a few days. Ten thousand barrels of oil has been handled by the Illinois Pipe Line Co. from the Maljamar's three producers.

The Prairie Oil & Gas Co. is also putting its No. 1 Keel permit well on the pump, more to test the porosity of the formation, as the well is figured to be good for only 15 bbls.

After being capped for the past eight months the Skelly Oil Co.'s No. 1 Lynch permit well in Section 22-17-31, will be drilled in as soon as rigging up is completed.

West of this well, the Mid-Continent Oil Co.'s No. 1 Woolley Jones well in Section 21-17-30 is fishing for 19 joints of 10-inch casing which was dropped a week ago.

In the Artesia Field, Henderson, Dexter & Blair, Inc., has moved back on its No. 1 State well in Section 9-19-28, and will carry the hole from the present depth of 2,140 to 2,800 feet. The Manhattan Oil Co. is also making good time on its No. 1 Cronin permit well, formerly the Monita Oil Co.'s test, in Section 1-18-27, the hole being down 2,568 feet. The contract calls for a 2,800-foot test.

R. B. Rehn and associates are rigging up to deepen the old T. A. Stephens well in Section 19-18-28, which was carried down below 2,200 feet when first drilled.

The Lackawanna Oil & Refining Co.'s No. 1 Gates permit well in Section 17-16-27 is shut down temporarily at 2,000 feet. A new contract is being made to carry the hole an additional 500 feet.

Drilling Report

Eddy County—Drilling

Clark & Grimm's No. 1 Daugherty, NE SW, Section 3-17-27, drilling at 900 feet; Compton's No. 3 Mann permit, SE SE, Section 3-18-27, shut down at 400 feet; Compton's No. 2 State, NW Section 2-18-27, drilling below 1,100 feet; Danciger Oil & Refining Co.'s No. 1, SW cor. SW Section 23-17-27, location; Empire Gas & Fuel Co.'s No. 1-B Russell, SE NE, Section 34-17-27, drilling at 1,660 feet; Hamilton Petroleum Co.'s No. 1 Billings, Section 12-19-26, shut down; Kelly No. 1 Berry permit, NW NW, Section 27-17-27, drilling at 500 feet; Lackawanna Oil & Refining Co.'s No. 1, NE

(Continued on Page 106)

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BETTER BE SAFE THAN SORRY

Sixteen Producers in Southwest Texas

Shallow Fields Make 376 Bbls. and Laredo Has 100-Barrel Oil Well and 186,000,000 Feet of Gas

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Apr. 11.—There were 19 oil and gas wells and 7 failures completed in Southwest Texas last week ending Saturday, outside of the Laredo territory, and in that territory there was one oil well, one gas well and 11 abandonments. Total operations listed for the entire southwest territory last Saturday were 236, as compared with 253 for the week before. Fifteen oil wells in the shallow fields of Southwest Texas had an initial production of 376 bbls. and one in Laredo 100 bbls., making a total of 476 bbls. Five gas wells, one of which was in the Laredo territory, added 186,000,000 feet open flow. Most of the abandonments were in proven territory.

There was nothing out of the ordinary in the proven fields of the territory, except the report that the first pipe for the Rio Grande Valley Gas Co.'s line from the Mirando Field to Brownsville has arrived, and Houston Oil Co. is getting ready to drill in the Kingsville Field, making the first major interest in the field to drill other than the Humble The Texas Company and Roxana Corp., who each bought small leases there recently in addition to what they already had. Up to Saturday night the last cuts in the price of crude made by the Magnolia had been met in Somerset by the Grayburg, and in Luling Grayburg cut crude to $1 to meet the Magnolia, and in Laredo Texpata cut Mirando crude to $1 to meet the Magnolia. There are several purchasing agencies left that have made no announcements.

Building of the Rio Grande Valley Gas Co. line to Brownsville and the floating of $2,500,000 notes of the Houston Gulf Gas Co. for extensions of its gas lines and the purchase of the Kingsville gas line by the Houston Oil Co. will be responsible for quite a lot of drilling activity for gas during this period in which the oil business is feeling the effect of low price of crude oil. Houston Gulf Gas Co.'s $2,500,000 of notes, it is understood, were oversubscribed to the amount of $15,000,000, indicating that there is money in the East for such enterprises.

Rockdale—Milam County

Chicago Land Co. completed No. 3 Gambill, Thompson Survey, at 1,350 feet, making 50 bbls. and extending the field. Chicago Oil & Land Co.'s No. 4 Gambill, Thompson Survey, at 1,361 feet, made 20 bbls. Rockdale Oil Co.'s No. 1 Lon Hudson, at 1,300 feet, 15 bbls.; Rockdale Development Co.'s No. 3 Lorenz, Thompson Survey, at 1,414 feet is pumping 4 bbls; Fritz Fuch's No. 2 Lon Hudson, Arnett Survey, at 1,225 feet is making 25 bbls.; Noack Oil Co.'s No. 4 J. B. R. Smith, Chambers Survey, at 1,400 feet is pumping 12 bbls.; Brady Brothers' No. 10 Baldridge, at 870 feet, pumping 25 bbls.; Noack & Laning's No. 8 Baldridge, Chambers Survey, at 847 feet, pumping 20 bbls.; Noack & Laning's No. 9 Balridge, Chambers Survey, at 852 feet, pumping 20 bbls.; R. T. Clifton's No. 1 Luetge is a 7-bbl. pumper; Kent-Middleton's No. 1 Bartlett estimated at 20 bbls. on pump.

Luling-Caldwell County

Magnolia Petroleum Co.'s No. 27 Tabor, Reaville Survey, at 2,132 feet, estimated at 110 bbls. on the pump, same company's No. 17 Alf Mercer, Reaville Survey, at 2,104 feet, estimated at 25 bbls. on the pump; same company's No. 15 Shubert at 2,104 feet estimated at 20 bbls. on the pump.

Adams Gas Field, Medina County

Western Gas & Fuel Co. and C. E. Lange's No. 4 Adams at 1,004 feet is estimated at 31,000,000 feet of gas.

Refugio County Field

Coast Gas Co.'s No. 5 Shelly, Block 144, at 2,250 feet estimated at 40,000,000 feet of gas.

Cartwright Field—Live Oak County

Houston Oil Co.'s No. 2 Sellers at 2,094 is estimated at 40,000,000 feet of gas.

Abandonments

In Milam County, in the Rockdale territory, Clear Lake Oil Co. abandoned No. 1 Coulter at 1,100 feet; Noack & Laning abandoned No. 1 Poor Boy lease at 1,200 feet; Ellison Oil Co. abandoned No. 5 Kevil in Arnett Survey; Noack & McCormick abandoned No. 1 Marshall at 1,357 feet, was abandoned dry.

Gonzales County

C. A. Campen abandoned his No. 1 Lamkin in Gonzales County, 2½ miles south of Waelder in wildcat territory at 2,275 feet after pulling in the derrick while pulling casing.

Bexar County

Marland Oil Co. abandoned its No. 1 San Antonio Trust Co., a wildcat in J. Pickins Survey, Block No. 1, at 1,267 feet.

Medina County

Yantis et al abandoned No. 1 Chandler in Durst Survey No. 13 at 1,206 feet in semiproven territory.

Laredo District

Edward St. Albans' No. 6 Lopez in Jim Hogg County, Share No. 1, Block No. 7 of the Las Animas Grant at 2,142 feet, has been completed, estimated at 100 bbls. of oil when put on the pump. Cole Petroleum Co.'s No. 39 Benavides, in the Cole gas pool, Survey No. 9, Block No. 8, Duval County, in sand at 1,720-24 feet, is a 50,000,000-foot gas well.

Abandonments during the week include Magnolia Petroleum Co.'s No. 19 Merchant State Bank in Survey 236 in Jim Hogg County, immediately north of the Alworth Pool. It made salt water at 2,032-37 feet. It is in a sand 1,000 feet deeper than the producing horizon. Simms Oil Co. abandoned No. 12 Weil in Survey No. 81, Block No. 8, a location; and The Texas Company abandoned location for its No. 12 Weil, Block No. 1, Survey No. 81, of the Randado Pool. The locations were offsets on the north edge of the Randado production. Magnolia company abandoned its No. 20 de la Garza, in Block No. 7 of Survey No. 291, in Jim Hogg County, in the Randado Pool, at 2,565, the producing horizon of the field at 1,250-1,300 feet. Duke & Langford abandoned the location for No. 3 Martinez, Block 22, in the Charco Redondo Pool, in the southern part of Zapata County. Buffam, after shooting the casing and plugging back, has abandoned his No. 1 J. Benavides, in Duval County, in Block No. 38, at 1,698-1,700 feet, showing a little oil and salt water. It is nearly offset on the southwest by a gasser of the Magnolia in the same horizon.

Mimms & Putnam, trustees, abandoned No. 1 de la Garza in Webb County, in Survey No. 47, at 2,519 feet, near the Carolina-Texas Field. Barnsley-Chicago Syndicate's No. 1 de la Garza in Survey 335, Block 19 of the Carolina-Texas Field, was abandoned at 3,100 feet. Cornhuskers' No. 6 Garcia, Survey No. 605, Webb County, was abandoned at 1,657 feet in proven territory; Murchison Oil Co.'s No. 3 Bruni, Block No. 45, was abandoned as dry at 1,760 feet; O. W. Killam's No. 1 Puig, near the Straight Eight and St. Albans producers, 2 miles east of the Aviator Pool, was abandoned at 2,200 feet, dry.

Cole Gas Field—Duval

Cole Petroleum Co.'s No. 35 Benavides, Survey 21, Block 4, located 150 feet to southeast lines and 450 feet to southwest lines, has spudded in; No. 36 Benavides, Survey 412, Block 14, located 169 feet to east lines and 266 feet to north lines, is drilling at 1,300 feet; No. 37 Benavides, Survey 21, Block 6, located 150 feet to southeast lines and 450 feet to southwest lines, has derrick up; derrick is up for No. 38 Benavides in Survey 10, Block 12, at 155 feet to northeast and northwest lines; No. 39 Benavides, Survey 19, Block 8, located 660 feet to northwest and southwest lines, is drilling at 1,650 feet; No. 40 Benavides, Survey 20, Block 7, located 660 feet to northwest and southwest lines, is on hard rock at 200 feet. Killam-Maddox's No. 1 Bruni, Survey 4, Block 5, located 150 feet to northeast and southeast lines, has been spudded in. Houston Oil Co. has spudded in No. C-1 Rosa Benavides in Survey 20, Block 4, located 660 feet to southwest and southeast lines, and set surface casing at 80 feet.

O'Hern & Seacord Pool

Buffam and others' No. 1 J. Benavides, Block 38, Subdivision 1, Mesquite ranch, located 150 feet to northeast lines and 175 feet to northwest lines, is whipstocking out. O. W. Killam's No. 1 Bruni, Survey 585, at 600 feet to east lines and 150 feet to north line, is drilling at 700 feet.

Piedras Pintas Salt Dome

Humble Oil & Refining Co. is rigging up in Survey 82 at 300 feet to east line and 3,200 feet to north line for No. 1 Carrillo.

Randado Field—Jim Hogg

Magnolia Petroleum Co.'s No. 21 Merchants State Bank, Survey 415, is testing at 1,215 feet; No. 20 de la Garza, Survey 291, Block 7, at 450 feet to southwest corner, is drilling at 2,340 feet. Livingston-Ritchson's No. 1 Palacious, Survey 287, Block 18, located 150 feet to northwest corner, is on sand at 1,360-65 feet. The Texas Company has made location for No. 2 Weil in Survey 81, Block 1, at 150 feet to southwest corner. Simms Oil Co. has made location for No. 12 Weil in Survey 81, Block 8, at 150 feet to south line and 750 feet to east line.

Henne, Winch & Fariss Pool

Magnolia Petroleum Co.'s No. 27 Martinez, Survey 276, located 1,750 feet to east line and 2,525 feet to north line, has set casing at 2,037 feet.

Kitselman & St. Albans Field

Edward St. Albans' No. 6 Lopez, Share 1, Block 7, located 500 feet to south line and 450 feet to east line, is on a sand at 2,139 feet. K. & S. Corp.'s No. 57 Holbien, Survey 17, Block 40, located 330 feet to northeast corner, is drilling at 2,275 feet. Associated Oil Co.'s No. 3 Martinez, Share 1, Block 18, located 800 feet to west line and 150 feet to north line, is fishing at 2,142.5 feet.

Alworth Pool

Magnolia Petroleum Co.'s No. 19 Merchants State Bank, Survey 236, located 450 feet to south line and 150 feet to west line, tested salt water at 2,032-37 feet and is standing; derrick is up in same survey at 450 feet to west line and 150 feet to south line, for No. 22 Merchants State Bank. Alworth Brothers are preparing to begin operations on their No. 6-M Garza in Block 6, Survey 39, and on their No. 7-M in Block 5, Survey 39. Alworth, Stevens, Hild Corp. have started operations on their No. 7 Garza in Block 5, Survey 39.

Schott Field—Webb

Laredo Oil Co.'s No. 12 J. M. Garcia, NW SW Survey 458, located 760 feet to west line and 160 feet to north line, has spudded in and drilling at 425 feet. Jones-Garcia Oil Co.'s No. 3 Garcia, Survey 463, located 150 feet to northeast corner, is rigging up. Magnolia Petroleum Co.'s No. 6 Garcia, Survey 58, located 1,990 feet to west line and 440 feet to north line, is drilling at 1,785 feet.

Albercas Pool

O. W. Killam's No. 1 Bruni, Block 65, Albercas grant, at 1,470 feet to southwest corner, is drilling at 1,800 feet.

Aviator or Bruni Tracts

Ball and others have derrick up for No. 1 Puig in Block 58, at 150 feet to south-

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SOUTHWEST TEXAS OPERATORS GOING OUT TO BLOCK UP ACREAGE

By B. D. Stevenson

SAN ANTONIO, Tex., Apr. 11.—Quite a number of the smaller fry of operators in Southwest Texas are taking to the woods. Realizing that an overproduction of oil can never be counted on lasting a great while and that ultimately and inevitably the world will again cry for oil, they are going out to block up acreage. Prices of leases have been going up in Southwest Texas. A few years ago 50 cents an acre would get almost anything. Major companies were as much or more responsible for wildcat acreage going up. They wanted the land and kept bidding till they got it. Now prices of leases are expected to go down. At least some independent operators and leasebounds are going to try and use the argument of slump in oil to block up territory they have long had their eye on. When the industry wants oil again they hope to have some choice wildcat stuff ready and waiting to be drilled. Right now it is understood that no major company will buy an acre of ground. The custom of blocking acreage on a structure, selling most of it off to the major companies and drilling the well with the proceeds and having a balance and profit left even if it was a dry hole is an industry that is dead for the time being in Southwest Texas.

There is considerable talk that the next time any wildcatting is done up and down the Balcones escarpment between San Antonio and Rockdale it will be done without reference to the Edwards lime. Following the finding of oil in the Edwards at Luling after the best geologists in the country had advised against drilling there, every contract made read "100 feet into the Edwards." The field is pretty well drilled up and the logs of wells show that the Edwards is faulted against the Eagle Ford shale and Taylor marl which accounts for the oil and which it is counted is not likely to occur again in all the Balcones fault zone region. But where the formations in a wildcat well run high and indications are favorable and the structure seems apparent it is understood to be the consensus of opinion that a wildcat well should keep drilling and test the formations below the Edwards. The Edwards lime is a water-producing formation and not originally oil producing, but formations lie below it easily within reach of the drill that should carry oil where favorably located.

At this time there are only a few wells in Southwest Texas in wildcat areas that are interesting. Rycade's deep test in Maverick County on the Chittim ranch has made more hole but has disclosed nothing of particular interest, except that it is getting deep, being around 5,800 feet. Sun Oil Co. has started one wild-

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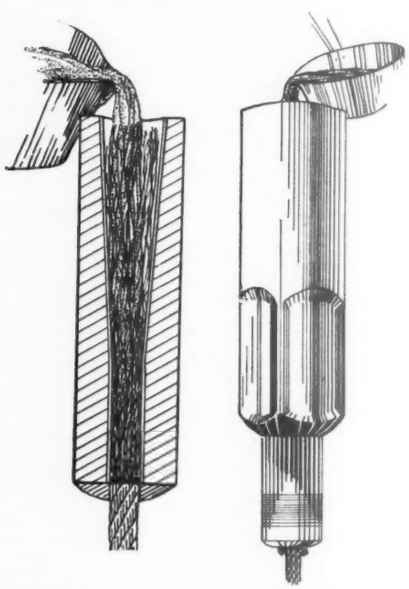

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To Continue Policies in Salt Creek

Midwest Refining and Ohio Oil Companies Hold Semiannual Conference at Casper, Wyoming

By Frank B. Taylor
Staff Correspondent, Rocky Mountain Area

CASPER, Wyo., Apr. 9.—The boards of the Standard Oil Co. of Indiana and the Midwest Refining Co. met in the semi-annual joint meeting here under the chairmanship of Col. Robert W. Stewart and went over the plans proposed for the operations of the two companies in the West for the coming season.

The officials from Chicago were Col. Robert W. Stewart, E. G. Seubert, Beaumont Parks, R. H. McElroy, Allan Jackson, E. J. Bullock, R. E. Humphreys, Amos Ball, J. J. Nevotti and Doctors Morton and Cash. The officials from Denver and the head offices of the Midwest Refining Co. were T. A. Dines, J. D. Clark, H. G. Naylor, H. C. Bretschneider, F. D. Anderson, J. T. Barnett, J. H. Clark, Judge Owens, J. C. Howard, G. B. Jenkinson, R. C. Coffin, A. D. Aiken, H. H. Brooks, W. L. Greiner and R. D. Dietler. The party was joined at Casper by R. S. Ellison, A. W. Peake, W. H. Finney and other officials of the Standard Oil Co. of Indiana and the Midwest Refining Co. here.

The first day was spent in an intensive conference on the situation of the oil industry in the Rocky Mountain region and its relation to the two firms. The party went to Salt Creek Field and inspected the work there while engaged in this conference. The conditions in the field were found very satisfactory and the general opinion was that there would be no great change in the present methods of development at Salt Creek. This is usually considered as the criterion for all the fields in this region where the Midwest Refining Co. and the Standard Oil Co. of Indiana have interests.

No Change in Policies

It is therefore taken to mean that the annual meeting here at Casper will not inaugurate any changes in the present plans of operating the fields and that the policies that obtained during the past year will be continued during the season of 1927. This was confirmed at a luncheon at the Townsend Hotel, when several of the officials stated there would not be any radical change this year in the company's policies.

In the Rocky Mountain region, it was pointed out, the methods of conservation here will preserve the oil fields for the use of the coming generation. Instead of getting out all the oil possible in the least possible time, many of the fields are producing at half their capacity and some have been shut down for more than two years, simply to keep from flooding an overstocked market.

In the Salt Creek Field, the daily production runs about 45,000 bbls. at present, but if necessary Salt Creek could jump to a daily production of 150,000 bbls. simply by turning the valves on shut-in wells.

Colonel Stewart, in a speech at the banquet, dwelt on the good feeling that existed between the Standard Oil Co. of Indiana and the citizens of Casper and the likelihood of this feeling continuing for many years to come as the oil companies had no plans that were antagonistic to Casper as a city.

Unit Operation

The operation of an oil field by the unit system, as recommended by the Federal Government, is to be tried in the Elk Basin Field in Wyoming, through an agreement reached between the Ohio Oil Co. and the Midwest Refining Co. The gas drive will be used, the key or input wells being selected regardless of ownership, and the resulting production and operating expenses will be equitably divided between the companies.

"This innovation," Chairman Work of the Federal Oil Conservation Board says, "appears to be based on good engineering and is in direct line with the Conservation Board's recommendation of united and co-ordinated effort by field co-operation between neighboring operators in building up pressure. Co-operation within the industry in adopting the best practice, strongly urged by the Board, is," he says "well illustrated by this action by the leading companies in the Rocky Mountain territory."

The Elk Basin Field lies on the Montana-Wyoming state line, mostly in Park County, Wyoming, but some of the wells are over in Montana. The field presents an odd sight to the visitor who sees it for the first time. One drives along over a level plain with only sage brush in sight and the eternal, white-capped mountains in the distance and suddenly the earth opens into a great pit, the bottom of which is dotted with derricks and wells. When the first drilling machine was brought to Elk Basin, it was lowered over a deep cliff to the floor of the chasm by means of the drilling cable. There was no road then leading to the bottom of the pit.

Two horizons have been found productive in Elk Basin, the upper or oil bearing sand producing the oil and the lower sand producing natural gas only. The first sand averages about 1,500 feet in depth and the gas sand about 2,200 feet.

While several companies were interested in Elk Basin and had secured leases there in the early days of the field, the Ohio Oil Co. and the Midwest Refining Co. have taken over the holdings of these smaller concerns and are now operating them, drilling new wells and producing the older ones, so that the field at present is controlled by the Ohio Oil Co. and the Midwest Refining Co.

Iles Dome Well 1,900 Bbls.

Colorado had an important strike the past week in the Midwest Refining Co.'s well on the Iles Dome, Moffat County, which came in with an initial production of 1,900 bbls. daily. The well is in Section 22-4-92.

The oil was found in the shale as are the other wells of the Midwest on this structure and the production has been going to The Texas Company's refinery at Craig. As soon as a test was completed on this new well, the well was pinched in as the tankage at Iles is not large enough to flow the well at capacity. The other wells on Iles Dome are rather small producers making about 25 bbls. each.

The Continental Oil Co.'s No. 2 Steinmier, in the Florence Field, also came in the past week and is good for 105 bbls. This well is west of the main development and located on Four-Mile Creek.

While it is somewhat early to call the new development at Canon City, in the southeast part of Colorado, an oil field, there are seven wells that appear to be capable of making production there at this time. The development is generally thought to be merely an extension of the Florence Field, but some operators are claiming that a new field is under development and that it is wholly separate from the older development near Florence.

The two deep wildcats drilling near the Boulder Field, on the Parallel Dome, are both below 4,000 feet. The Sinclair and McKinnie well is at 4,575 feet and the Essok Oil Co.'s test is at 4,050 feet. Both wells expect pay in the Muddy or Dakota formation and may drill to 5,000 feet. The Sinclair and McKinnie well is the same which has been reported as the Repollo Oil Co.'s well in the past, the Repollo Oil Co. being a subsidiary of the Sinclair interests.

Utah Development

In Utah, the Midwest and Utah Southern well on the John Shafer Dome is drilling in salt at 5,430 feet after passing through gray sandy shale from 5,168 to 5,400 feet. Nothing of commercial importance has been found yet. The discovery well at Cane Creek remains shut down. The Snowden & McSweeney well on the Cane Creek Dome is drilling at 1,200 feet with the objective about 2,600 feet.

On the Elk Ridge structure, the Midwest Refining Co.'s wildcat is drilling at 1,414 feet after some time lost straightening hole. This well will be a deep test to show what is in all horizons. On the Cedar Mesa structure, the Utah Southern Oil Co. and the General Petroleum Co.'s well has set 10-inch at 2,015 feet and is drilling below that level.

Montana Drilling

Operations in Montana are confined to the Sunburst Field where there is activity, but Lake Basin and Cat Creek are routine. The stray sand found in the Madison lime after the Ellis sand has been drilled and found dry, is of great interest to the operators in the central part of the Sunburst Field. It now appears that every well should be drilled at least 100 feet into the Madison lime below the contact where the Ellis sand is found, in order that a test of this stray sand may be had. One authority at Sunburst claims such tests should be drilled into the lime until either production or water is found.

Ten new wells were started the past week in Sunburst and seven completions recorded. The California Petroleum Co.

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BOW ISLAND WELL ABANDONED FAILING COMMERCIAL PRODUCTION

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Apr. 9.—In the Bow Island Field, southern Alberta, Imperial Oil, Ltd., Burdett No. 1, Section 8-11-11w4, has been abandoned in the Pre-Cambrian formation at 3,950 feet, having failed to secure commercial production. This test was started last year by Imperial Oil, Ltd., under arrangement with the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary, which originally developed the Bow Island gas field; the purpose of the Imperial being to test the horizons underlying the Bow Island gas sand by deep drilling. A small show of oil was encountered in the deep limestone, but failed to develop commercial production when tested. The drillers are now shutting off the water, preparatory to dismantling the outfit. No further deep drilling will likely be undertaken by Imperial Oil, Ltd., in this area; though no definite announcement has yet been made as to the company's plans.

In the border areas, Imperial-Erickson Coulee No. 1, LSD 13, Section 8-1-12w4, is at 3,570 feet and fishing for a lost socket. In the Ribstone area, east central Alberta, Imperial-Ribstone No. 1, Section 5-45-1w4, is at 2,958 feet and drilling.

In the Jumping Pound district, west of Calgary, Imperial-Bow River No. 1, LSD 15, Section 12-25-5w5, is at 5,080 feet and has run 6¼-inch casing at 4,979 feet. Further south, Imperial-Highwood No. 1, LSD 3, Section 36-18-3w5, is at 2,115 feet and drilling. To facilitate the transport of supplies to the Imperial Oil, Ltd., camp at this point, a cable bridge 500 feet long and 75 feet high has been constructed across the Highwood River immediately opposite the well, the material being supplied by Imperial Oil, Ltd., and the construction work done by Charles Wilfred and Trevor Wallator.

In the southern foothills, west of Nanton, Imperial-Rice Creek No. 1, Section 4-14-2w5, is getting ready to resume at 5,747 feet.

Turner Valley

In the Turner Valley Field, southwest of Calgary, Vulcan Oils No. 1, LSD 11, Section 13-20-3w5, is making 125 to 130 bbls. crude naphtha from the Madison lime. Vulcan No. 2, same LSD, is rigring up, and will probably spud in early next week. Work will then be commenced on the derrick for Spooner Oils No. 2, Section 24-20-3w5. Spooner No. 1, LSD 12, Section 13-20-3w5, is at 2,985 feet and pulling and resetting casing.

Great West Oils No. 1, SE Section 7-20-2w5, is at 5,475 feet and fishing. Illinois-Alberta Oil & Refining Co. No. 1, LSD 14, Section 12-20-3w5, is slightly increasing production, ranging from 78 to 90 bbls. with an average of 85 bbls. crude naphtha. New McDougall-Segur No. 1, LSD 14, Section 12-20-3w5, is making about 75 bbls. of light crude from the Dakotas at 2,595 feet; this well has early in April shipped 3,500 bbls. since being brought into production.

McLeod Oil Co. No. 2, LSD 16, Section 1-20-3w5, is at 4,045 feet and shut down, Head Driller Roy Widney having to undergo an operation. Drilling is expected to resume about April 15. Meanwhile, the well is making about 50 bbls. crude naphtha, with production slightly increased. McLeod No. 3, same LSD, is at 1,100 feet and drilling. New Valley Oils, LSD 4, Section 6-21-2w5, is getting ready to resume at 1,550 feet after the winter shutdown.

Market for Gas

Illinois-Alberta Oil & Refining Co., McLeod Oil Co. and Vulcan Oils, Ltd., are making arrangements to market the residual gas from their producing wells in the Turner Valley Field. The three companies have a wet gas production aggregating approximately 15,000,000 feet. Details of the project for utilizing the gas have not yet been made public. The problem of disposing of the waste gas from the Turner Valley wells has been seriously regarded for some time, especially in view of the prospect of further wet gas production. Royalite Oil Co. sells a portion of its waste and residual gas to the Canadian Western Natural Gas Co., which pipes it to Calgary, this gas being purified for domestic use; and Imperial Oil, Ltd., and its allied companies have been studying the problem of utilizing the additional gas production.

Dalhousie Oil Co. No. 6, LSD 10, Section 13-20-w5, is at 2,785 feet and drilling. This test got a small show of oil and a little gas in the Dakotas at 2,665

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Seal Beach Storage Continues Problem

Getty Leases Tank Farm at Watson and Transports Crude by Tank Wagon. New Pipe Lines Planned

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Apr. 9.—Paul Getty's No. 1 Cleaver, which was finished in the town lot section of the Seal Beach Field during the latter part of last week, built up a short time later to 3,500 bbls. per day but owing to the limited storage facilities available the well has been beaned down considerably. Getty's No. 1 Cleaver, which is being officially completed as a 3,000-bbl. well from 4,725 feet, is flowing from an open hole between 4,685 feet, where the 8⅝-inch was landed, and bottom. It is the first independent drilling project to be finished in the town lot area and owing to the fact that none of the various pipe line companies is willing to purchase oil some difficulty is being experienced in handling this production. Getty has partially solved the problem by renting the White Star's tank farm near Watson and the 125,000 bbls. of storage facilities acquired are being filled up as rapidly as possible. The White Star's tank farm at Watson rented by Getty is about 12 miles away from the Cleaver lease at Seal Beach and in the absence of direct pipe line connections, Getty has resorted to the utilization of tank wagons for transporting this crude. He has lined up some 15 or 20 tank wagons and trailers and they are kept in constant use transporting the daily production of his initial completion, which has been beaned down to around 2,500 bbls. a day. The recent cut in crude enables Getty to store this oil to advantage, although it may be necessary to again resort to trucking when it is finally disposed of to some refiner. In other words, it looks as though the oil stands Getty around $1.25 per barrel delivered to the White Star's farm at Watson. It will require another 10 or 15 cents per barrel to cover delivery charges when sold, not to mention the rental and insurance cost.

Using Idle Tank Farm

The utilization of this idle and partially completed tank farm is a wise move on the part of this energetic operator, for even though he only nets 50 cents a barrel that is better than closing down the well entirely, due to inability to dispose of production to any of the major pipe line companies at the present time. The present arrangement of handling this oil independently, however, may cause Getty some inconvenience in the future if he should attempt to negotiate a contract with some of the major pipe line companies.

Just what Paul Getty will do with the production expected to result from the completion of three more wells within the next 30 days remains to be seen. Steel storage can be erected at approximately 50 cents per barrel and, while it is entirely feasible to take care of future production in this manner, it is doubtful if Mr. Getty would care to undertake such elaborate steps, unless forced to do so because of inability to dispose of his output. Ample financing could undoubtedly be secured and, in view of the fact that Getty's present expenditure would be limited to the cost of tankage and cash payment for royalty oil, the banks would be sufficiently protected gainst loss. The final selling costs, however, would have to include the total cost of the tanks erected to handle this emergency less their salvage value. On the basis of 92 cents per barrel, which is the present price of 26 gravity Seal Beach crude, it is estimated that operators could erect steel tankage and store present production for a year at a total cost of approximately $1.50 per barrel.

Independent operators, therefore, if sufficient finances were available, could store present production to advantage. Initial expenditures would require sufficient capital to erect adequate tankage and pay royalty owners their share of production. In other words, it would cost approximately $615 to store 1,000 bbls. of crude for a year. This would include purchase of the land owners' royalty at 92 cents per barrel and cost of tanks at 50 cents per barrel. Paul Getty's No. 2 Cleaver blew in as a gasser an hour or two ago and considerable anxiety is being felt because of the extreme fire hazard due to the proximity of many boilers. Every fire within a dangerous radius has been ordered extinguished in order to prevent a catastrophe.

Field Storage

The Pan American has three more wells rapidly nearing completion on the Naples lease and they should all be tanking oil within 10 days. This company and the Petroleum Securities, an allied organization, both of which are controlled by the Doheny family, are running 12 additional strings of tools. The Pan American recently completed the extension of its pipe line into the town lot area and the company is now running out approximately 4,750 bbls. daily from its first two completions in this district. The Pan American, like the Standard and other pipe line companies, has not yet made any purchase contracts and will probably not do so until conditions improve. The California Petroleum is constructing a rather elaborate field tank farm in this section and, while it should prove ample to take care of the company's anticipated production, it would not permit the purchase of any considerable amount of outside production. The field storage being erected consists of 10 individual well tanks of 1,000-bbl. capacity each and four 10,000-bbl. steel pipe line tanks to provide adequate working room at all times. These 14 containers are all grouped together and will be surrounded by a cement retaining wall which will afford adequate protection against breakage, flooding or overflow resulting from fire. This company is running 11 strings of tools in the town lot area at present and its pipe line facilities will be extended into this area in the very near future as three of the present drilling projects are scheduled to come into production within 30 days. The California Petroleum is refraining from making any purchase commitments, although the company may modify this policy at a later date, especially if this section does not prove as productive as some anticipate.

Pipe Line Construction.

The General Petroleum and California Eastern will soon begin construction work on their respective pipe lines into the town lot area and, while neither of these concerns has yet obligated itself to purchase the production of others, it is quite possible both will take advantage of the prevailing low price of crude a little later. Both, of course, will first handle their own production and if storage facilities permit additional purchase, commitments will be made later. The California Eastern is drilling four wells, while the General Petroleum has eight drilling projects on the Wasom property. The Richfield Oil Co. has already started work on its pipe line extension and this concern will probably be running considerable oil out of this district by midsummer. Richfield has a contract covering production of the Marland Oil Co., now running around 15,000 bbls. per day, and since the latter is drilling eight direct offsets along the east line of the town lot area, its production will probably exceed 25,000 bbls. per day within two months. The Richfield Oil Co. is reported to have closed one other contract covering anticipated production in the town lot area but has not adopted the general policy of contracting for this oil at present. A check of drilling operations made a few days ago reveals that there are seven

(Continued on Page 123)

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, Well, Location—	S	T	R	Depth	Status—
Smith Pet. Co., No. 1 Johnson, Hawthorne	17-	3-	14	6,100	gr. sd. drilling
General Pet., No. 1 Smith, Potrero	35-	2-	14	4,500	sd. sh. drilling
General Pet., No. 1 Guiberson, Potrero	35-	2-	14	Rig	wait. devel.
Cal. Eastern, No. 1 Smith, Potrero	35-	2-	14	5,282	suspended
Cal. Eastern, No. 1 Santa Monica, Potrero	27-	2-	14	Rig	rigging up
Associated, No. 1 Cypress, Potrero	34-	2-	14	4,450	cmtd. oil sand
Getty, Geo. F., No. 1 Cypress, Potrero	35-	2-	14	Rig	wait. devel.
Getty, Paul, No. 1 Cypress, Potrero	35-	2-	14	Rig	wait. devel.
California Pet., No. 1 Sutton, Potrero	35-	2-	14	Rig	wait. devel.
California Pet., No. 1 Toma, Potrero	35-	2-	14	Rig	wait. devel.
California Pet., No. 1 Armour, Potrero	35-	2-	14	Rig	wait. devel.
Cole, Fred. E., No. 1 Cypress, Potrero	35-	2-	14	Rig	wait. devel.
Dill Oil Co., No. 1 Cypress, Potrero	35-	2-	14	Rig	wait. devel.
Walker, Fred., No. 1 Cypress, Potrero	35-	2-	14	Rig	wait. devel.
Potrero Oil Co., No. 1 Cypress, Potrero	35-	2-	14	Rig	wait. devel.
Domingues Extension, No. 1 Compton, Domingues	22-	3-	13	5,530	sd. sh. drilling
Getty, Geo. F., No. 1 Anderson, Rivera					location
Circle Oil Co., No. 1 Pomeroy, Manchester	22-	3-	14	3,358	suspended
Standard, No. 1 University, San Fernando	15-	2-	15	5,762	hd. sd. drilling
Standard, No. 1 Austin, Topango	11-	1-	17	2,490	to abandon
Sou. Calif. Drg. Co., No. 1 Matteson, El Segundo	1-	3-	15	4,735	sd. sh. drilling
Petroleum Sec., No. 1 Weston, El Segundo	27-	4-	14	1,400	hd. sd. drilling
Calif. Pet. Dev., No. 1 Spitz, Capistrano	2-	8-	8	4,000	suspended
E. J. Robinson, No. 1 A. P. K., San Juan Capistrano	13-	8-	8	2,414	suspended
Cardiff Oil Co., No. 1 Oceanside, San Diego	24-13-		4	2,516	sd. sh. drilling
Oceanside Oil Co., No. 1 Pacific, San Diego	23-11-		5	3,210	suspended
Petroleum Sec., No. 1 DeBaker, Bandini	18-	2-	12	5,615	hd. sd. drilling
Union, No. 1 Moser, Athens	12-	3-	14	5,690	abandoning
General Pet., No. 1 Lomita, Sunset Beach	19-	5-	11	4,910	hd. sd. drilling
Johnson, Geo. W., No. 1 Wickham, Los Angeles Co.	32-	5-	17	2,839	suspended
Rider, E. R., No. 1 El Segundo, Los Angeles Co.	12-	3-	15	2,300	suspended
Reliance Home Inv. Co., No. 1 Leuzinger, Los Angeles	8-	3-	14	Mtl.	building rig

IMPORTANT NORTHERN CALIFORNIA WILDCATS

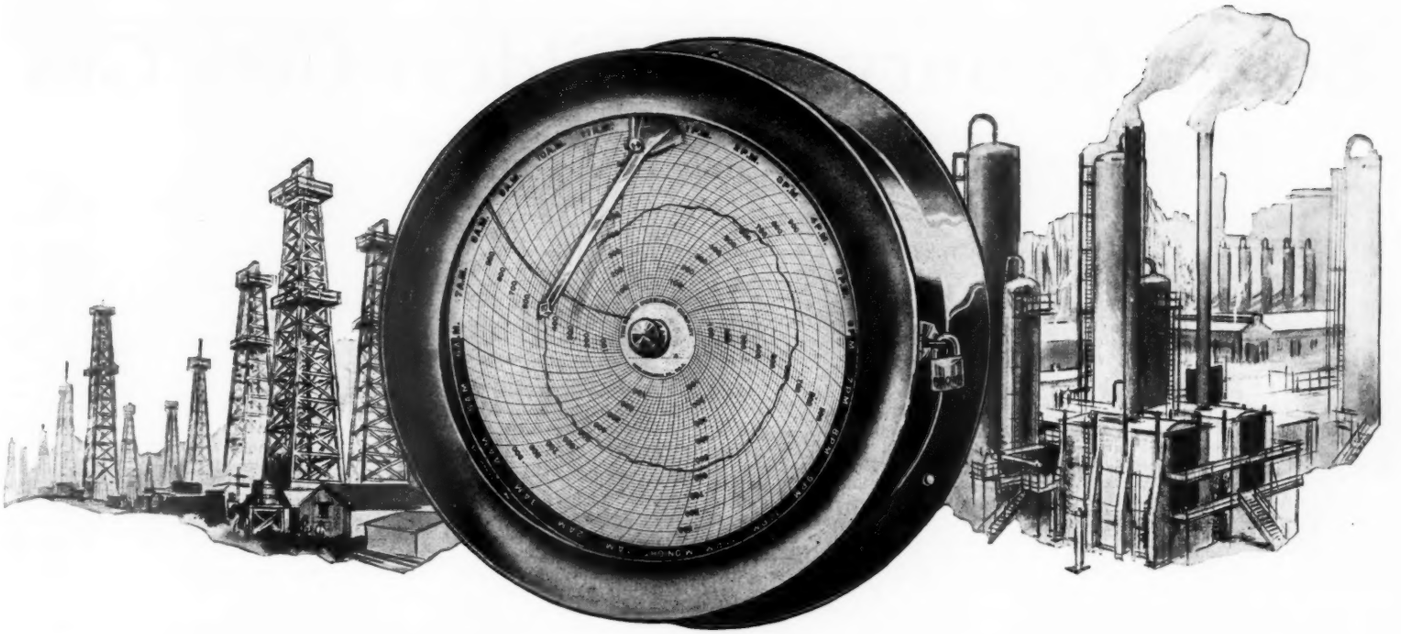
Associated, No. 1 Smith, Kettleman Hills	12-23-18	2,043	suspended
Bolsa Chica, Well No. 1, Kettleman Hills	30-22-19	2,365	suspended
General Pet., No. 1 Burbank, Kettleman Hills	30-23-19	3,165	fishing
General Pet., No. 1 Dome, Kettleman Hills	26-22-18	Mtl.	building rig
C. C. M. O., No. 1 McGlashan, Kettleman Hills	17-24-19	1,225	sd. sh. drilling
South Coalinga, Well No. 1, Kettleman Hills	35-24-19	2,150	bl. sh. drilling
Ahlburg Gas Co., Well No. 1, Kettleman Hills	7-23-23	Rig	rigging up
Milham Expltn., No. 1 Kettleman, Kings Co.	2-22-17	894	hd. sd. drilling
Shell, No. 2 Berlywood, Moorpark	32- 3-20	2,570	hd. sd. drilling
California Pet., No. 1 Camarillo, Ventura Co.	21- 2-20	1,525	hd. sd. drilling
C. C. M. O., No. 1 Hobson, Ventura Co.	22- 3-24	5,890	br. sh. drilling
C. C. M. O., No. 1-B Hobson, Ventura Co.	16- 3-24	3,625	br. sh. drilling
Milham Expltn., No. 1 Sexton, Ventura Co.	19- 3-22	7,100	fishing
Standard, No. 1 Camarillo, Ventura Co.	29- 2-20	4,950	reaming
Standard, No. 1 Montalvo, Ventura Co.	17- 2-22	4,892	gr. sd. drilling
Petroleum Sec., No. 1 Diablo, Ventura Co.	4- 4-18	1,350	hd. sd. drilling
Miley Expltn., No. 2-A Casitas, Ventura Co.	7- 3-25	550	idle—rain
Rio Grande, No. 1 Canet, Ventura Co.	9- 3-23	4,944	oil and gas
Parkford, E. A., No. 1 Strathern, Ventura Co.	5- 2-18	2,320	sd. sh. drilling
Star Petroleum, No. 1 Canet, Ventura Co.	13- 3-23	3,210	fishing
Richfield, No. 1 Janes, Ventura Co.	16- 5-18	1,650	suspended
Richfield, No. 27 Piru, Ventura Co.	35- 5-18	1,480	suspended
Superior, No. 1 Pena, Ventura Co.	18- 4-17	3,220	sd. sh. drilling
Milham Expltn., No. 2 Buttonwillow, Kern Co.	8-28-23	4,205	set 8⅝
Milham Expltn., No. 3 Buttonwillow, Kern Co.	7-29-24	Mtl.	building rig
Pacific Eastern, No. 1 Bakersfield, Kern Co.	6-30-28	3,991	hd sd. drilling
C. C. M. O., No. 1 Quinn, Delano	23-25-27	960	bl. sh. drilling
Union, No. 1 Gill, Famosa	8-28-27	3,281	suspended
Union, No. 1 Colm, Kern Co.	24-28-20	1,070	abandoning
Standard, No. 1 Bacon, Kern Co.	27-28-24	Mtl.	building rig
Marland, No. 1 Jacalitos, Fresno Co.	22-21-15	3,788	hd. sd. drilling
Petroleum Sec., No. 1 Aniotz, Monterey Co.	2-22- 9	1,890	hd. sd. drilling
Petroleum Sec., No. 1 Sandy, Monterey Co.	18-27-13	....	location
Ozena, No. 1 Allensworth, Tulare Co.	26-24-24	2,300	bl. sh. drilling
Grafford, C. W., Well No. 1, Tulare Co.	26-24-24	2,525	fishing
Walkiln Pet., No. 1 Emerick, San Luis Obispo Co.	35-27-10	2,470	redrilling
Richfield, No. 1 Wreden, San Luis Obispo Co.	10-29-17	Rig	suspended
Shell, No. 1 Cowell, San Mateo Co.	16- 5- 5	2,525	hd. sd. drilling
Shell, No. 1 Murphy, Petaluma	29- 5- 6	4,790	hd. sd. drilling
Talbot Oil Co., Well No. 1, Alameda Co.	15- 3- 3	600	sd. hd. drilling

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This Week	Daily Average	Total Last Week	Daily Average	This Year to Date	Same Time Last Year
Crude oil	79,335	11,334	112,928	16,132	1,739,694	3,577,129
Fuel oil	225,770	32,253	143,041	20,434	2,214,119	1,772,236
Diesel and gas oil	.....	.....	.....	.....	1,019,661	554,442
Gasoline	148,025	21,146	74,452	10,636	1,805,768	1,559,499
Tops	.....	.....	.....	.....	.....	149,906
Coastwise—						
Crude oil	360,843	51,549	508,358	72,623	6,712,590	6,252,056
Fuel oil	128,287	18,327	232,104	33,158	3,261,480	2,295,837
Diesel and gas oil	.....	.....	.....	.....	53,071	84,314
Gasoline	175,686	25,098	75,123	10,732	2,002,875	1,897,849
Kerosene	.....	.....	.....	.....	40,605	51,754
Tops	.....	.....	.....	.....	.....	127,421
Exports—						
Crude oil	.....	.....	.....	.....	727,007	641,498
Fuel oil	452,745	64,678	393,020	56,146	6,529,268	4,317,704
Diesel and gas oil	50,287	7,184	12,005	1,715	226,225	103,899
Gasoline	.....	.....	.....	.....	403,822	964,797
Tops	72,371	10,339	.....	.....	72,371	.....
Kerosene	.....	.....	146,711	20,959	573,343	541,426

TANKER SHIPMENTS, SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	251,458	413,059
Gasoline	74,061	10,580	78,184	11,169	660,161	267,717
Tops	.....	.....	.....	.....	.....	73,698
Lubricants	53,860	7,694	.....	.....	111,970	104,088
Coastwise—						
Fuel oil	257,920	36,846	152,912	21,845	1,568,689	1,341,648
Diesel and gas oil	.....	.....	.....	.....	134,308	.....
Gasoline	172,683	24,669	49,144	7,021	1,207,020	1,115,477
Kerosene	.....	.....	.....	.....	30,674	118,576
Exports—						
Fuel oil	73,916	10,559	.....	.....	369,767	605,183
Gasoline	90,437	12,920	22,917	3,274	1,023,487	510,781
Kerosene	107,712	15,387	10,480	1,497	356,914	426,859
Lubricants	.....	.....	.....	.....	9,120	9,093



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Logan County, O., Wildcat Gets Gas

Saginaw Sand Producer in Michigan Drops to 40 Bbls. Increased Activity Follows Price Raise

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Apr. 9.—Very little was accomplished by the drill in the Central West Field during the week, owing to exceptionally bad weather conditions that prohibited work to an advantage. Indiana and Illinois fields failed to report any completions owing to the many streams passing through the oil-producing regions of the two states being out of their banks. A few completions were reported from the old Lima Field as well as in some parts of the Central Ohio Field, otherwise much of the drilling work over the territory was shut down.

In the old Lima Field of northwestern Ohio, the most important completion was a wildcat drilled by the Forest Oil & Gas Co., in the northeast corner of the Robert Patterson farm, near Forest, in Logan County, which developed into a gas well with an initial volume of 200,000 feet. The finding of this well may bring about additional drilling in that area which is in the same belt that the Hardin County gas production is being developed.

In McDonel Township, Hardin County, H. E. Schmidt's No. 4 well, 250 feet from the north line and 1,100 feet from the west line of the Earl Hites farm, in the Roundhead Field, showed an initial production of 25 bbls. Top of Trenton was at 1,450 feet and oil found at 40 feet in the sand.

A wildcat drilled by the Oak Harbor Natural Gas Co. near the northeast corner of the August Vogel farm, Section 31, Salem Township, Ottawa County, and not far distant from the town of Oak Harbor, struck top of sand at 1,305 feet and gas was found at 60 feet in the sand and estimated at 40,000 feet initial volume. While not a large well it will help materially to supply gas for the line that furnishes the town with heat.

In Jackson Township, Sandusky County, near Helena, Milton J. Beaty's No. 14 well, 600 feet from the north line and 200 feet from the west line of the W. A. Heyman farm, NW, Section 3, topped sand at 1,305 feet and oil at 45 feet in the sand, with an initial pumping of 5 bbls.

Auglaize County

In Washington Township, Auglaize County, not far from Wapakonetta, the Brookside Oil Co.'s No. 1, in the southeast corner of the H. O. Kuck farm, in SE. Section 29, was dry. Top of sand was found at 1,190 feet and drilled 60 feet in the sand. Same company's No. 3 well, 800 feet from the south line and 600 feet from the west line of the F. H. W. Kucherman farm, in the same quarter section, struck top of sand at 1,190 feet and at 55 feet in showed an initial production of 10 bbls.

West of Findlay, in Eagle Township, Hancock County, B. Porter and others' No. 19 well, 600 feet from the north and east lines of the Henry Deeds farm, SE. Section 6, pumped an initial of 15 bbls. Sand was found at 1,212 feet and oil at 73 feet in the sand.

In Webster Township, Wood County, the Ray Oil Co. struck top of the Trenton at 1,231 feet and at 15 feet in the sand at No. 3 well, 675 feet from the north line and 150 feet from the west line of the William Roller farm, NW, Section 22, the well showing an initial pumping of 12 bbls., which is a very good producer for that territory.

Since the discovery of a commercial producer on the Hunker farm, in Section 21, Liberty Township, Seneca County, north of Tiffin, it looks as though a number of additional tests will be made in that area which is near Cromer. Every available acre for miles around has been taken under lease on short drilling contracts. The Hunker well had an initial production of 40 bbls.

Central Ohio

Work has been held up to a large extent throughout the Central Ohio Field, although 11 new wells have been reported with but few new ones starting up. In Clay Township, Knox County, Davidson and Bell Brothers' No. 7, in the northwest corner of the A. Larason 80 acres, Section 18, proved a duster.

East Ohio Gas Co. brought in a light gas well at No. 3 in the northwest corner of the J. H. Miller 100 acres, Section 27, Hanover Township, Ashland County. Ohio Fuel Gas Co. is drilling No. 2 on the Tom Miller farm, Section 16, same township. J. E. Ringler and others are starting a test in the southwest corner of the A. N. Robinson 9 acres, Section 11, Clear Creek Township, same county.

In Killbuck Township, Holmes County, the East Ohio Gas Co. brought in an excellent gas well 1,600 feet from the south line and 400 feet from the east line of the Byron A. Middaugh 80 acres, Lot 18.

In Athens County, Carthage Township, the Logan Gas Co. has a light gas well in its No. 4 well, in the southeast corner of the J. W. Barnhill 64 acres, Section 25. Fairfield Gas Co. has a light gas producer in its third test, 997 feet from the north line and 612 feet from the east line of the J. L. Varner 109 acres, Lot 3. E. A. Sweeney and others are drilling No. 2 in the northwest corner of the C. D. Swartz 163 acres, Lot 17.

The Pure Oil Co. and Eastern Ohio Oil Co.'s test, in the southwest corner of the C. E. Humphries 59 acres, Section 13, proved to be a duster.

Michigan

The Sun Oil Co.'s Saginaw sand well, on the Ferdinand Stelzreide farm, NE, Section 11, Saginaw Township, Saginaw County, Michigan, and the farthest producer to the north in the Saginaw Field, that a couple of weeks ago started at close to 500 bbls. production from the lower sand, has now dwindled to 40 bbls. a day, which naturally could be expected. What significance is to be attached to the falling off of the Sun's well's production is not certain by any means. Oil men pointed out at the beginning that its nearly 500 bbls. a day might not continue long, and they declared the well might only have tapped a pocket. But work is still under way on the well, though Sun company representatives have not announced the precise course they will follow. The drilling of a half dozen or more additional tests is expected to throw considerable light on the possibile productivity of the Saginaw sand.

Spurred on by the Sun Oil Co.'s deep well, several other companies announced plans during the past two weeks to drill the lower sand and within a short time it is expected that at least six more wells will be drilling on the way to the Saginaw sand. In fact several already have been started. The Saginaw Prospecting Co. has announced plans for two, the Sun company has started a second test near its Ferdinand Stelzreide deep hole. The Ohio Fuel Corp., the Ohio Oil Co. and the Bliss Petroleum Co. have each announced that they will drill to the Saginaw.

Another possibility of important results lies in the Dundee test of the J. & S. Development Co., which is drilling its Saginaw sand dry hole at Deindorfer and Charles Streets down to the Dundee sand and is scheduled to reach that formation within a very few days, if no bad luck is experienced. It is likely to be close to two weeks before any of the new wells that are going to the Saginaw sand will reach that formation.

Renewal of Activity

There has been some increase in activity in the Berea Field during the past week and a number of new wells have been started. Bad weather conditions and the low price of oil combined to slow down Berea production for a time, but the weather has improved, and the increase in oil price last week may have been a factor in increasing the amount of drilling. Saginaw crude which had reached a price of $1.46 per barrel has been put on a basis of Lima crude at $1.71 per barrel, although the operators are fighting to have it based on the price of Pennsylvania crude.

Production in the field, according to compilations from well-informed sources, is about 1,400 bbls. a day. This represents the production of 158 producing wells, an average production of close to 9 bbls. to the well. Of course, many of the wells, particularly some of the newer ones in the southeastern part of the field, are doing much better than that, while some in the older wells and wells unfavorably located, are falling below that mark.

Developments

Only one completion was reported during the past several days on account of bad weather, although close to a dozen drilling wells should reach the Berea sand during the next few days.

The completion reported is the Fordney Petroleum Co.'s No. 1, on the Gardner property, on Schaefer Street, which produced an initial of 40 bbls. from the Berea sand.

Among some of the wells that are due in are: Schaiberger and others' No. 1 Schaiberger property, at Pleasants and Oakley Streets; Fordney Petroleum Co.'s No. 1 Flack property; W. M. Bradley and Son's No. 1 Clarence Clark property, at Clark and Hanchett Streets; Bliss Petroleum Co.'s No. 2 Fred Engel farm, east quarter SW, Section 10, Saginaw Township, north of the Shattuck Road, between Bay Street and the Mackinaw Road, to the western edge of the field.

Field Notes

The Sun Oil Co.'s well, on the Rabe farm, NE SW, Section 11, Saginaw Township, struck the top of the Berea sand at 1,828 feet, the well being 4 feet shallower to the Berea than the Saginaw sand well of this company on the F. Stelzreide farm, which is to the northeast. Whether this means anything as applied to the Saginaw sand remains to be seen, for there is no definite knowledge as to the precise position of the Saginaw with respect to the Berea. It is a little less than 500 feet below the

(Continued on Page 108)

NIAGARA LIME FORMATION OIL FEATURE IN GUERNSEY COUNTY, OHIO

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Apr. 11.—The Big Injun sand development in Henry district, Clay County, West Virginia, has been defined as well as the Gordon sand pool in Morris Township, Greene County, Pennsylvania. At the close of last month there were but 44 wells drilling in southwest Pennsylvania. Nearly all are located in Greene County.

A feature in the southeast Ohio fields is the way the Niagara Lime formation in Guernesy County is coming to the front as a producer of oil. Primarily it was regarded as gas territory, but last month it furnished more new production than the Clinton sand territory. However it is very deep drilling and the excessive cost will prohibit more activity at this time.

In Section 13, Hanover Township, Licking County, the Edward H. Everett Co has a 65-bbl. producer at No. 4 on the F. M. & Kate W. Haynes farm. In the southwest quarter of Section 23, Jackson Township, Noble County, the Washington & Noble County Oil & Gas Co. had an unusual experience at a test on the Emmett Way. They drilled the well into the Niagara Lime and to a total depth of 4,315 feet and got a strong flow of salt water.

Neither the southwest Pennsylvania or the West Virginia fields completed better than light wells. The gas companies are less active than for several months. Near Hickory, Washington County, Pennsylvania, there is a little new development that is calling out some new work. There are 8 wells drilling at this time.

Late Completions

In Section 4, Athens Township, Athens County, Ohio, the Some Oil Co. has completed in the Berea grit a second test on the Athens County Children's Home farm and it is a light pumper.

In the northeast quarter of Section 34, Falls Gore Township, Hocking County, Rice & Co. have drilled a test on the J. T. Hite farm through the Berea grit and dry. In Killbuck Township, Section 18, Holmes County, The East Ohio Gas Co. has a gasser in the Clinton sand good for 2,500,000 feet on the Byron Middaugh farm.

In the deep sand territory in Section 13, Hanover Township, Licking County, the Edward H. Everett Co. has completed and shot in the Clinton sand No. 4 on the F. M. & Kate W. Haynes farm. It produced 65 bbls. the first 24 hours.

In Lot 4, Section 14, Chatham Township, Medina County, E. R. Efson, Son & Co. completed No. 30 on the Carl G. Packard farm. It is a very light pumper. On Lot 4, Section 16, same township, the same parties completed No. 3 on the Wertz-Packard farm. It is dry and will be used for forcing air down to adjoining wells.

Meigs County

In the central part of Section 8, Sutton Township, Meigs County, H. B. Goddard and others have completed in the Berea grit a test on the T. & N. Brewer farm, good for 5 bbls. a day. In the northeast quarter of Section 33, Chester

(Continued on Page 111)

a Wind Storm

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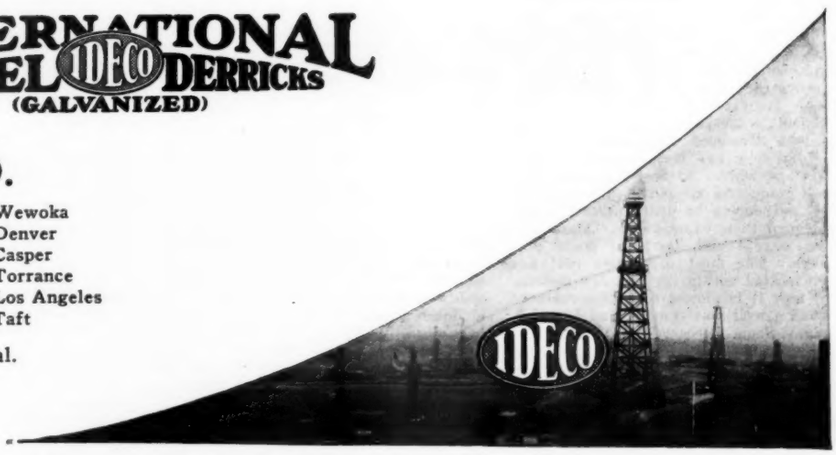
Eldorado, Tulsa, Tonkawa, Drumright, Okemah, Seminole, Wewoka, Denver, Casper, Torrance, Los Angeles, Taft

Los Angeles and San Francisco, Cal.



More Good Wells in Ambrose Pool, Ky.

Renewed Interest Shown in Clay and Allen Counties, Tennessee, and in Amory Area, Mississippi

By Whit
Staff Correspondent, Kentucky-Tennessee

WHITESVILLE, Ky., Apr. 11.—The only features in the Kentucky Field during the week were centered in the Ambrose Pool, now the most important one within the Blue Grass State. The wells are in nearly every instance among the largest being found and at a comparatively shallow depth, ranging around 700 feet. This pool is in Ohio County in the western division, several miles to the north of Hartford, the county seat and some dozen miles south of Whitesville. Taree exceptionally fine wells were recorded the past several days, one on the Weller farm, for 125 bbls., one on the Rodney Taylor lease, for 125 bbls. and one on the Scott Ambrose lease, for 100 bbls.

Very few completions were made during the week owing to weather conditions. For the past three weeks much of the oil territory in Ohio, Daviess and other counties in the western division has been under water from the overflow of Rough River, and where the water has receded the roads are practically impassable so that material and machinery cannot be taken to the locations. Despite these handicaps many rigs are operating in other parts of the territory, especially in the Bowling Green Field of Warren County; the Glasgow Field of Barren County and in Cumberland-Monroe and Clinton Counties, while Allen County is well submerged with water and mud.

There has been a lively leasing campaign between the Scottsville Field in Allen County, Kentucky, and the development to the southeast in Clay County, Tennessee, where some prominent structures have been found that may mean a big area of producing territory is to be opened up. To the south of Scottsville, some 10 miles, Adolphus, a small hamlet on the Kentucky-Tennessee state line, had quite a drilling activity several years ago and some very nice producers were found. It is from Adolphus to the east, on both sides of the line, that leasers have been working, and through both Macon and Clay Counties, Tennessee, with Redboiling Springs territory being taken in large blocks by large operating concerns, which means that the 70 or 80 miles of intervening territory will be most thoroughly tested out.

Kentucky Oil Field

Dr. Willard R. Jillson, state geologist, does not believe that the Kentucky oil and gas fields have been exhausted. He asserts his belief that a wealth of oil and gas is in the bowels of the earth beneath the Kentucky surface, and points out the reason for the faith he holds.

Doctor Jillson asserts, for example, that the oil field recently found at the conjunction of Hancock, Ohio and Daviess Counties has been sufficiently exploited to prove the truth of the surface indications. He gives it as his opinion that the field is far more extensive than has yet been developed. Existence of oil in this territory has been proved for four years and more. At first the wells were small producers, but as they were shallow and inexpensive to drill operators have continued their explorations. Many dry holes were found, but also many producers. The most productive pool has been located within the past few months, and now it is almost a daily occurrence to find a well that runs around 100 bbls. daily. Some even overtop this. The earlier wells drilled are still producing, with little diminution from the first production. This is an indication that their life will be long. It is most remarkable now well the wells in the Ambrose Pool of Ohio County are maintaining their production. It looks similar to the Sinking Creek Field of years ago in Lee County.

Week's Work

Another inactive week, so far as completed work is concerned, prevailed, there being few wells brought in.

A summary of the week's work in the Kentucky-Tennessee fields shows 10 completions, 9 producers, with an initial production of 419 bbls., and 1 dry hole. When compared with the previous week there were 14 less completions, 11 less producers, 353 bbls. less production, 1 less dry hole and 2 less gas wells. The wells were distributed by counties and districts as follows:

County—	Oil Comp.	Wells	Prod.	Dry	Gas
Ohio	4	4	352	0	0
Warren	3	2	22	1	0
Lee-Owsley	1	1	10	0	0
Kentucky	8	7	384	1	0
Tennessee, Clay County	2	2	35	0	0
Total	10	9	419	1	0
Last week	24	20	772	2	2
Difference	14	11	353	1	2

Eastern Kentucky

But one completion was reported from the Eastern Division, it being the Thomas Foreman Co.'s No. 4 on the Thomas Foreman property, near Saldee, in District 36, of Owsley County, good for an initial production of 10 bbls.

Petroleum Exploration and Subsidiaries' report for 1926 shows the company to have 676 producing oil wells in Kentucky, with a daily average production of 990 bbls., 43 gas wells with a volume of 309,000,000 feet and one gasoline plant with an average daily production of 440 gallons.

In the lower end of Eastern Kentucky, Knox County district, McDermott and others, of Beattyville, are preparing to start a new test on Indian Creek. The Petroleum Exploration Co. is drilling its second well in that area on the Helton land, where it recently drilled in an excellent gas well.

The Cumberland Pipe Line Co., it is stated, proposes soon to connect up the new Owsley County Field, south of the old Lee County Field, with a branch pipe line extending from the Pebworth section southward to the Beatty-McGuire well on the Brewer land on Island Creek, as a test of the well would warrant the extension. This will be the most noteworthy extension in the eastern division for some time past and the importance of an immediate market for production is reflected in the activity of new and old concerns in getting leases and arranging for new work. Beatty & McGuire, who drilled the Brewer well, have organized a new company and propose to push the development of their holdings, while among other concerns in the field is the Petroleum Exploration Co., one of the large operating concerns in the state. This company will do some immediate testing. The Dulin Oil Co., which has been active in Clay County, will also push the development of this section, south of Owsley, as soon as materials can be moved to advantage.

Western Division

A roustabout in the Western Kentucky Field summed up the present conditions in the western part of the state, in a few words: "Of all the mud he ever muddied, the Western Kentucky mud is the muddiest mud he ever saw." Guess he has missed being in the Illinois Field, in a wet time, or in old Wood County, back in the early '90's which was the muddiest spot in Ohio, and there is plenty of the same kind in all fields.

Only two counties in the West reported completions during the week, being Ohio and Warren Counties. Barren, Allen, Cumberland, Monroe, Clinton, Daviess, Hancock, and Simpson Counties failed to register any completions.

Warren County

Johnson and Julian's No. 11 on the J. L. Jenkins 373 acres, 4 miles west of Bowling Green, Warren County, pumped 12 bbls. after shot, from a depth of 461 feet. No. 12 will soon start spudding.

Wood Oil Co.'s No. 30 well, 1,600 feet from the south line and 800 from the east line of the C. G. Davenport 222 acres farm, west of Bowling Green, in District 6, pumped 10 bbls., initial from the shallow sand after a shot at 455 feet. No. 31 will be spudding in a few days.

Jennie S. Bright, attorney, brought in No. 4 well, 600 feet from the east line and 800 from the west line of the J. L. Jenkins No. 2 farm, west of Bowling Green, which proved a duster in the shallow pay at 550 feet.

The new work being done around Alvaton, about 11 miles southeast of Bowling Green, is the most active spot in the county. Wells so far found are only small pumpers, a barrel or so, but it is cheap territory to develop, on account of the shallowness of the pay sand.

Ohio County

The Ambrose Pool is the attractive spot at this time in Ohio County or any of the counties of the west end of the state as wells far above the average are being found. In this pool, James C. Ellis brought in his No. 8 well, 125 feet from the north line and 450 from the west line of the John R. Weller 110 acres. A string of 574 feet of casing was set in this well. Top of sand was at 574 feet and bottom of sand 621 feet and shot with 150 quarts, the initial production was given as 125 bbls.

In the same pool, the Ohio Oil Co.'s No. 2 in the northeast corner of the Rodney Taylor 50 acres, set 677 feet of casing, struck top of sand at 685 feet and bottom at 729 feet and shot with 180 quarts, resulting in a 125 bbl. initial producer. No. 3 same farm is nearing sand.

Rex-Pyramid Oil Co.'s No. 4 well, 125 feet from the south line and 700 from the west line of the W. Scott Ambrose 52 acres, adjoining the Ambrose heirs farm to the west, set a string of 547 feet of casing, struck top of sand at 547 feet, which was top of the sand and bottom of sand at 620 feet, with a 150-quart shot, developed a 100-bbl. initial producer.

In the extension to the Swope Pool some miles north of the Ambrose Pool, in Ohio County, the Chicago Petroleum Syndicate's No. 6 on the Mrs. Nannie Brown farm, is reported good for 2 bbls. initial.

Other Developments

The Ohio Oil Co. is reported to be down around 1,000 feet at a wildcat on the Henry Lashbrook 179 acres, northeast of Pleasant Ridge, east of Hewletts Store, southwest of Poplar Log Bridge and west of Wetterfield School, in Daviess County, and while there is a showing of oil, it is not sure that the well will be a producer, although the company will drill still deeper before abandoning the spot. This is far away from production.

Petroleum Exploration Co. has abandoned its No. 1 on the Higdon Heirs farm, in Daviess County, adjoining the Roby farm, where the Leeper Oil Co. found production. The material and outfit will be moved for a test on the F. F. Coomes farm, which adjoins the Higdon and Roby farms. Bert Thompson and others are drilling No. 2 on the Frank Pauliam farm, same county.

Charles Moon, of Scottsville, field manager of the White Plains Oil & Gas Co. spent a few days looking over the company's property in Ohio County. This company will do no more work in the county until weather conditions are better. Mr. Moon says the new field in Tennessee, just southwest of Allen County, Kentucky, is attracting much attention since the recent finds in Clay County. His company has a considerable acreage in the new territory.

Tennessee

Owens and Turner's No. 2 Mary Harrison farm, Jouett Creek, in Pickett County, Tennessee, cased off the First Sunnybrook sand and is now drilling at 290 feet, which is about 95 feet off the Second Sunnybrook sand. Slight showing of oil was found in a stray sand at 274 feet, or 208 feet under the base of black shale. On account of a break down they do not expect to complete for a few days.

Clark Oil Co.'s No. 2 on the B. C. Arney, same county, which was drilled 14 feet below the Pencil Cave on or about March 7, at a total depth of 574 feet, will be drilled to a depth of about 187 feet below the cave it is said

Celina Oil Co.'s test on the W. R. Hawkins, near Lock Branch School, in Jackson County, is of importance. This well started, it is reported, 300 feet below the base of black shale. Taking this into consideration Pencil Cave was encountered at 512 feet below base of shale or 212 feet from surface, a pay sand encountered at 71 feet under cave. The last report is that 11 feet of this sand was drilled. A well-known oil man visiting this well considers it a 75-bbl. pumper at least, but R. E. Blick, president of the company, is not desirous of giving out much information concerning his strike at this time.

Lawrence Orlov, Nashville, Tenn., within the next 10 days expects to be drilling his No. 1 on the Richardson farm, located near Wirmingham, on Eagle Creek, 10 miles northeast of Livingstone, Overton County, Tennessee.

H. Z. Clark's No. 1 Stone farm, drilled 176 feet below Pencil Cave pay, at a total depth of 561 feet, tubed and put to pumping will make a 10-bbl. pumper. This well is in the Clark Pool, in Clay County.

E. G. Brandenburg of Marianna, Okla., is drilling No. 1 on the Mrs. Coffey farm at depth of 450 feet. This farm is on Holly Creek, between Holly Creek School and Plain View School and in North Central Clay County. Mr. Brandenburg, also expects to be drilling in a few days his No. 1 on the G. A. Greenwood 100-acre farm 1¼ miles south of Willow Grove, in Clay County.

Cumberland Valley Oil Co., H. H. Lininger, vice-president and general manager, has completed No. 1 Barlow Langford 100 acres, in the 60 feet below Pencil Cave pay. The regular pay sand in the Mill Creek section is 106 feet below, but there is too much oil in the 60-foot pay to allow further drilling at this time. It is estimated that it will produce 100 bbls. daily. This is also a Clay County well.

In the same area, the Dixie Oil Co., H. H. Lininger, president, drilled in No. 1 on the Barlow Langford 300-acre tract, producing 25 bbls. daily. This well was completed 106 feet under the cave pay. It has a 65-bbl. tankfull awaiting storage. H. H. Harwood is drilling his No. 1 Barlow 100-acre tract, which is an offset to the Cumberland Valley Oil Co.'s Langford well.

W. G. Moorman and J. C. Herndon No. 2 Arms farm, lying across the Obey River about 2,000 feet from the Peterman Bend wells, almost directly east, was drilling at 265 feet. Progress on

(Continued on Page 108)

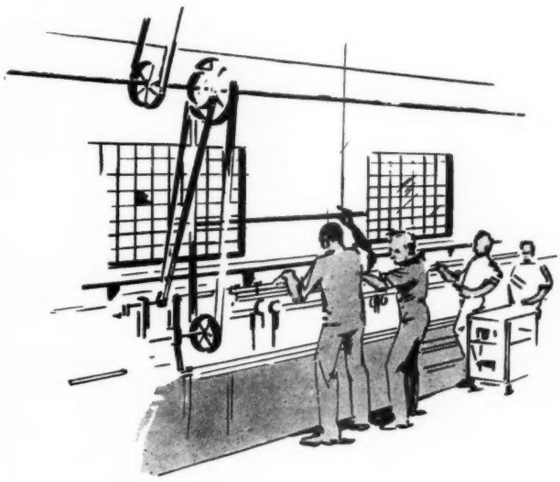
A special job at first

now a standard equipment

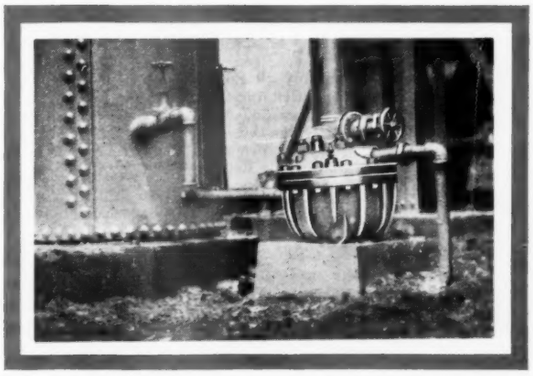
FISHER
TRADE MARK
REGISTERED

The Oil Industry rapidly growing out of its primitive origin presented to the Fisher Governor Company, a number of years ago, problems to conquer. Many of the first jobs were of a special character, to meet supposedly, special conditions, but these conditions proved to be universal and many of the first special devices have become standard equipment. That this is a fact, reflects creditably upon the original application of the Fisher organization to the problems.

The Fisher Steam Trap, Type No. 33, is now a standard piece of equipment that you will see functioning successfully in many places where it is required to remove the condensate. At the refinery it functions properly and conduces towards the efficient operation of the plant, thereby lowering costs and saving dollars. In the field when hooked on to a steam line, it increases the efficiency of steam engines by providing dry steam at all times. It embodies the most advance scientific principles; its mechanical construction is excellent and a series of the most exacting tests have proven its superiority.



THE FISHER GOVERNOR COMPANY



Fisher Steam Trap, Type No. 33, removes the condensate from heat exchangers, installed in the plant of the Hull Gasoline Company, at Winfield, Kansas.

392 Fisher Building
MARSHALLTOWN, IOWA, U. S. A.

Sources and Distribution of Petroleum

Comprehensive Survey Covering Atlantic Coast States in 1925 Made by Government Expert for Comparison

By E. B. Swanson*

The petroleum requirements of the area included in this report, consisting of the 17 Atlantic Coast states and the District of Columbia, are supplied by the oil production of western Pennsylvania and New York, the output of the Appalachian and Atlantic Coast refineries and the shipment of crude and refined oils from other domestic and foreign producing and refining centers.

During 1925, this area was dependent upon other domestic and foreign sources for 94.7 per cent of the crude oil put through the refineries located on the Atlantic Seaboard; 35 per cent of the gasoline consumed and 44 per cent of the gas oil and fuel oil delivered. Oil production in western Pennsylvania and New York furnished 2.7 per cent of the crude oil refined, while withdrawals from crude oil storage at the refineries supplied the remaining 2.6 per cent. The output of the Appalachian and Atlantic Coast refineries, together with withdrawals from storage at the refineries, supplied the remaining 65 per cent of gasoline and 56 per cent of the gas oil and fuel oil delivered.

PRESENTS FUNDAMENTAL STATISTICS

This analysis of the sources and distribution of petroleum and its major products in the Atlantic Coast states was prepared in co-operation with the American Petroleum Institute for the purpose of presenting certain fundamental statistics pertaining to the year ended December 31, 1925. It is intended to serve as a basis for comparison with similar statistical information, now being collected, relating to the distribution of petroleum products in the United States during 1926.

Consumption of Gasoline, Atlantic Coast States, 1925

State—	Bbls.
Maine	1,363,969
New Hampshire	820,025
Vermont	615,790
Massachusetts	6,538,453
Rhode Island	*1,305,933
Connecticut	2,275,233
New York	17,029,917
New Jersey	5,943,767
Pennsylvania	12,501,842
Delaware	426,692
Maryland	2,408,316
District of Columbia	1,067,343
Virginia	3,063,112
North Carolina	3,984,327
South Carolina	†1,999,109
Georgia	†3,304,813
Florida	4,715,059
Total Atlantic Coast	69,363,700

*Rhode Island total is partly estimated. †Estimates made by Bureau of Public Roads, Department of Agriculture. Totals for remaining states based on gasoline tax receipts.

Domestic Crude Oil Summary—Atlantic Coast—1925

Receipts—	Bbls.	Per Cent	Daily Average Bbls.
By tankers from Gulf Coast ports	72,566,238	68.39	198,784
By pipe line	16,245,675	15.31	44,509
By tankers from California ports	13,995,639	13.19	38,344
Withdrawn from refinery storage	3,302,686	3.17	9,048
Total domestic crude oil available	106,100,233	100.00	290,685
Distribution—			
Run to stills	104,599,845	98.59	286,575
Consumed as fuel	1,394,296	1.31	3,820
Shortage	106,092	.10	290
Total distribution	106,100,233	100.00	290,685

Pipe Line Receipts—Atlantic Coast—1925

Source—	Bbls.
Mid-Continent Field	11,903,368
Appalachian and Illinois Fields	4,342,307
Total pipe line receipts	16,245,675

Foreign Crude and Fuel Oil Summary—Atlantic Coast—1925

Receipts—	Bbls.	Daily Aver. Bbls.
Total receipts crude, fuel oil and topped crudes	50,762,748	139,076
Distribution—		
Consumed as fuel	24,200,540	66,302
Run to stills	23,765,760	65,112
Added to refinery storage	1,603,022	4,392
Added to bulk storage	745,710	2,043
Shortage	447,716	1,226
Total distribution	50,762,748	139,076

Gasoline Receipts, Production and Distribution

During 1925, the Atlantic Coast area was dependent upon shipments from California, Gulf Coast and foreign ports for 27,327,093 bbls., or 35.07 per cent of the total gasoline distributed, either for consumption within the area or as exports from its ports. Refineries located on the Atlantic Seaboard produced 41,526,673 bbls. and supplied an additional 1,405,778 bbls. from storage held at the refineries, while the refineries located in western Pennsylvania and New York supplied 7,665,554 bbls.

The following summary shows the sources and distribution of the gasoline marketed on the Atlantic Coast during 1925:

Atlantic Coast Gasoline Summary—1925

Production and Receipts—	Bbls.	Per Cent	Daily Average Bbls.
Produced by Atlantic Coast refineries	41,526,673	53.29	113,772
Received from Gulf Coast ports	17,542,020	22.51	48,060
Received from California ports	8,469,840	10.87	23,205
Shipped by Appalachian refineries	7,665,554	9.84	21,002
Drawn from Atlantic Coast refinery storage	1,405,778	1.80	3,851
Received from foreign ports	1,315,233	1.69	3,603
Total available for distribution	77,925,095	100.00	213,493
Distribution—			
Consumed in Atlantic Coast states	69,363,700	89.01	190,038
Exported from Atlantic Coast ports	7,623,955	9.78	20,887
Probable evaporation losses	700,643	*.90	1,919
Shortage	236,797	*.31	649
Total distribution	77,925,095	100.00	213,493

*The probable evaporative loss is computed as one-ninety-ninth of the consumption in the Atlantic Coast states, or a loss of 1 per cent estimated as occurring between the refineries or terminals and final delivery to the automobile tank. In as much as the actual evaporative loss may exceed the estimate of 1 per cent, the shortage item may include further evaporative losses and, at the same time, may be accounted for by possible increases in gasoline stocks held at bulk stations and storage places other than at the refineries.

*Economic Analyst, Bureau of Mines, Department of Commerce.

Production, Receipts and Distribution of Gas Oil and Fuel Oil

During 1925, the Atlantic Coast area was dependent upon shipments from California, Gulf Coast and foreign ports for 48,122,553 bbls., or 44.24 per cent of the total gas oil, fuel oil and crude oil consumed for industrial and commercial fuel purposes. Refineries located on the Atlantic Seaboard produced 58,925,514 bbls. and refineries located in the Appalachian region shipped 1,740,018 bbls. Of the latter shipments, however, 810,415 bbls. went to West Virginia, Michigan and Ohio.

The following summary shows the sources and distribution of the gas oil and fuel oil marketed on the Atlantic Coast during 1925:

Gas and Fuel Oil Summary, Atlantic Coast, 1925

Production and Receipts—	Bbls.	Per Cent	Daily Average Bbls.
Produced by Atlantic Coast refineries	58,925,514	54.16	161,440
Received from foreign ports	24,946,250	22.93	68,346
Received from Gulf Coast ports	20,483,962	18.83	56,121
Shipped by Appalachian refineries	1,740,018	1.60	4,767
Crude oil used directly as fuel	1,394,296	1.28	3,820
Received from California ports	1,298,045	1.20	3,556
Total available for distribution	108,788,085	100.00	298,050
Distribution—			
Consumed in Atlantic Coast states	103,103,947	94.78	282,477
Exported from Atlantic Coast ports	2,703,428	2.48	7,407
Shipped to Michigan, West Virginia and Ohio	810,415	.74	2,220
Added to Atlantic Coast refinery storage	616,572	.57	1,689
Added to bulk storage of foreign oils	745,710	.69	2,043
Shortage	*808,013	74	2,214
Total distribution	108,788,085	100.00	298,050

*The balance of 808,013 bbls., designated as "shortage" includes, in addition to losses in handling, some fuel oil added to storage at other places than refineries and, for the larger portion, gas oil and fuel oil sold by the refining and larger marketing companies to local distributors and marketers whose sales during 1925 were not included in the survey.

Information pertaining to the distribution of gas oil and fuel oil, divided by states and certain uses, was made available through the courtesy and co-operation of all of the major refining and marketing companies operating in the Atlantic Coast area. The companies co-operating in this survey and whose deliveries are included in the total tabulation were: Asiatic Petroleum Co., Ltd., Atlantic Refining Co., Barber Asphalt Co., Beacon Oil Co., Cities Service Refining Co., Crew Levick Co., Gulf Refining Co., New England Oil Refining Co., Pan American Petroleum & Transport Co., Prudential Oil Corp., Pure Oil Co., Sinclair Refining Co., Standard Oil Co. of Kentucky, Standard Oil Co. of New Jersey, Standard Oil Co. of New York, Sun Oil Co., The Texas Company, Tide Water Oil Co., Vacuum Oil Co. and the Warner-Quinlan Co.

No attempt was made to include the domestic sales of distributors or marketers receiving their oil supply from the companies mentioned and all intercompany sales or exchanges have been eliminated, the amounts included in this report being actual deliveries to consumers. The local distributors or marketers who were not included sold the major portion of their gas and fuel oil for domestic or commercial heating and the total figure for "heating of buildings" in the accompanying tabulation would be increased somewhat were the sales of such local distributors included. There were, in addition, a few sales of gas oil to public utility plants for gas enrichment made by companies located outside of the Atlantic Coast territory, deliveries of this oil being made in tank cars. These sales were in the South Atlantic states. A few sales, as well, by some of the smaller Appalachian refineries were not included. The sales include in the tabulation, however, account for fully 99 per cent of the total quantity marketed.

The following table segregates the gas oil and fuel oil marketed on the Atlantic Coast during 1925 into the major uses:

Gas Oil and Fuel Oil Marketed on Atlantic Coast, 1925

Distribution by Uses—	Bbls.	Per Cent
Bunker oil for steamships	32,479,711	30.70
Manufacturing	23,202,911	21.93
Gas and electric power plants	15,015,420	14.19
Used as fuel by oil companies	14,534,346	13.74
Smelters, foundries, steel mills and shipbuilding plants	7,822,490	7.40
Railroads	4,166,693	3.94
Heating of buildings	3,434,875	3.24
Exported to foreign countries	2,690,445	2.54
United States Navy, coast guard, etc.	1,732,803	1.64
Nonsegregated uses	718,682	.68
Total distribution, Atlantic Coast	105,807,375	100.00

The following table shows the total quantity of gas oil and fuel oil marketed in each of the states. Deliveries of bunker oil are credited to the state in which delivery was made.

State—	Bbls. Marketed
Maine	1,875,994
New Hampshire	138,430
Vermont	75,980
Massachusetts	11,139,506
Rhode Island	4,611,769
Connecticut	2,305,365
New York	15,990,786
New Jersey	35,796,794
Pennsylvania	13,945,074
Delaware	1,501,958
Maryland	5,564,836
District of Columbia	733,626
Virginia	733,130
North Carolina	60,823
South Carolina	1,908,810
Georgia	1,582,432
Florida	7,842,052
Total Atlantic Coast	105,807,375

Following will be found tables showing the distribution of gas oil and fuel oil in the Atlantic Coast area, divided by states and certain important uses:

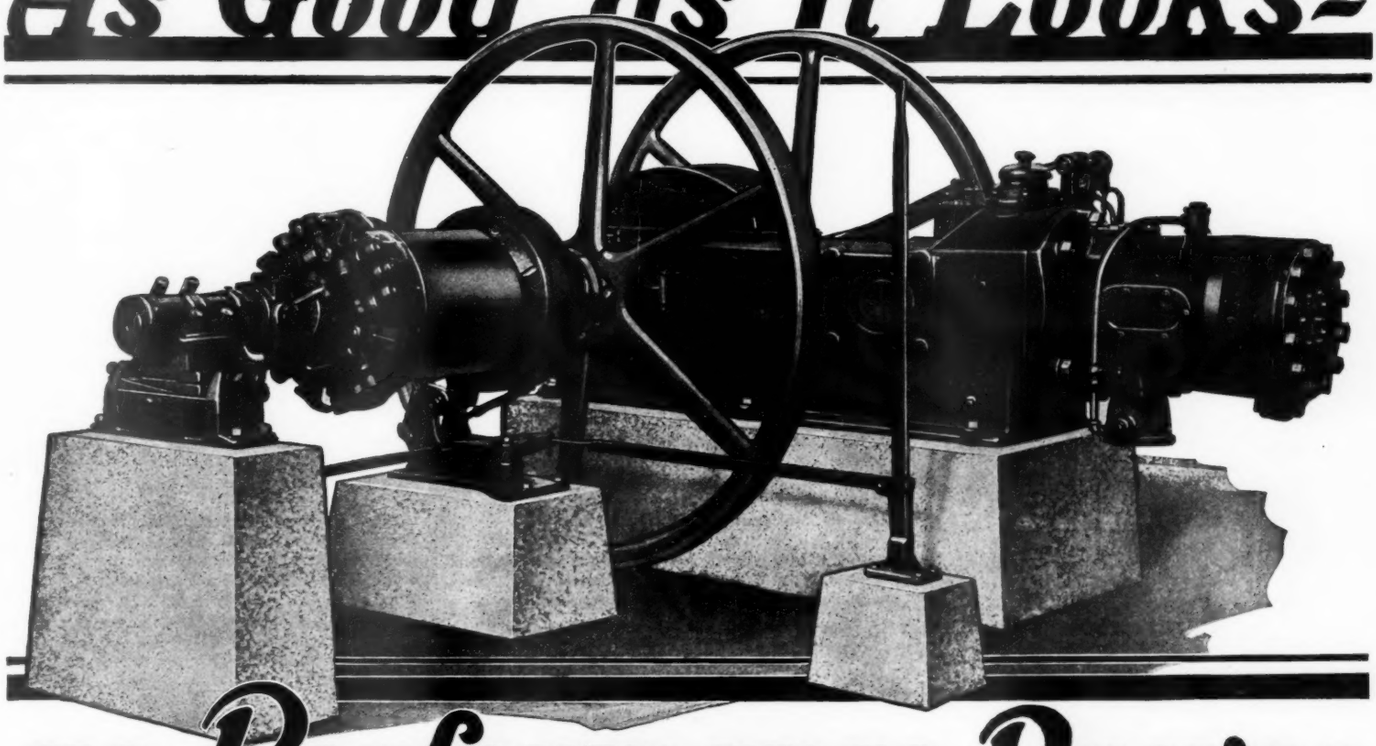
Distribution of Gas Oil and Fuel Oil, New England States, 1925

(Barrels of 42 gallons)

Distribution by Uses—	Maine	N. Ham.	Ver.	Mass.	Rhode Is.	Conn.
Railroads	1,574	29	2,040	93,968	176,548	4,360
Steamships (inc. tankers)	14,768	.....	.....	1,190,210	45,515	19,877
Gas and electric power plants	173,981	33,277	46,658	1,789,767	387,531	466,220
Smelters and mines	.....	.....	.....	.....	.....	5,111
Shipbuilding, steel mills, foundries	21,000	.....	.....	324,471	77,000	364,664
Automotive industries	.....	.....	.....	8,887	.....	32,968

(Continued on Page 160)

As Good as It Looks—



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BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

MEN KNOWN IN OILDOM

R. W. Howe

Prominent in Louisiana, Arkansas and Texas oil circles is R. W. Howe, manager of transportation and terminals of the purchasing and marketing department of the Atlantic Oil Producing Company of that district. His headquarters are at Shreveport, La., where he has been since 1922, coming from Philadelphia, Pa.

At Philadelphia, Mr. Howe was superintendent of the paraffin department of the Atlantic Refining Company. He started in the pressing department of that branch of the refining company 11 years previous and rapidly worked up until he was in charge of the paraffin manufacture.

Mr. Howe is a pioneer pipe line man. Following his graduation from Cornell University in 1908, he went to work on the construction of a pipe line which the Tuscarora Pipe Line Company was building across Pennsylvania at that time. He was transferred to Louisiana where in 1909 and 1910 he helped build the Standard Oil Company of Louisiana's original line in that State.

When this line was completed he went back to Pennsylvania to work for the Atlantic Refining Company, with which company he remained until he went to Shreveport in 1922 when the Atlantic Oil Producing Company bought out the Gilliland interests.

PERSONAL PARAGRAPHS

H. F. Sinclair, Earl W. Sinclair and C. E. Crawley spent several days in Tulsa last week.

* * *

W. G. Skelly, president of the Skelly Oil Company is again in Tulsa after a trip to the East.

* * *

R. M. Young, president of the Carter Oil Company, has returned to Tulsa after a visit to New York.

* * *

F. B. Berkly, of the Ross Heater & Manufacturing Company, was in Houston, Tex., on business last week.

* * *

H. B. Hickman, of Eastland, Tex., superintendent of the natural gasoline department of the Arkansas Fuel Oil Corporation, was in New Orleans, La., the past week.

* * *

H. W. Hathcock, formerly in the painting business in Kansas City and Tulsa, is now connected with Hill, Hubbell & Company in the Tulsa district. G. G. Langan, district manager of the company, is on a business trip in Louisiana and Texas.

Fred B. Ely has returned to the United States after spending a year in geological work in Venezuela.

* * *

W. K. Kirby, chief engineer of the J. G. White Corporation, has been in Houston, Tex., doing consulting work.

* *

C. N. Kirkpatrick, sales manager of the Landis Machine Company of Waynesboro, Pa. was a Tulsa visitor last week.

* * *

J. L. Thomas, discoverer of the Thomas and Reynolds Pool in Eastland County, Texas, made a business trip to Chicago, last week.

* * *

P. V. McGivern, general manager of the B. & A. Specialty Company of Tulsa, has returned from a trip through the Texas fields.

* * *

A. W. Thompson, sales manager of the Westcott Valve Company, has returned to Tulsa, Okla. after a visit to the Louisiana oil fields.

* * *

M. Chamberlain, Oklahoma City, Okla., lease broker, and one of the pioneer lease men in the Mid-Continent, is in Amarillo, Tex.

* * *

D. W. Mackey, of the Bradford Supply Company, Bradford, Pa., was a recent business visitor in Houston, Tex., and the Coastal region.

* * *

A. M. Gray, of the Gray Processes Corporation, of Newark, N. J., has been in Houston and Beaumont, Tex., the past week on business.

* * *

Mr. and Mrs. Frederick Saunders and family, of Petrolia, have left via Curacao, Dutch West Indies and the Panama Canal for Martinez, Cal.

* * *

E. F. Connors, formerly vice president of the Independent Oil & Gas Company of Tulsa, Okla. is visiting in his former home, Pittsburgh, Pa.

* * *

A. E. Raine, sales manager for the Wilson Oil Tools Corporation of Los Angeles, Calif., is making a tour of the Mid-Continent and Gulf Coast fields.

* * *

George J. Humphreys of St. Louis, Mo., special representative of The Fairbanks Company, New York, is making a tour of the Mid-Continent fields.

* * *

R. G. Barnum, president of the West Texas Oil and Gas Association, has returned to his home in Amarillo, Tex., after a fortnight's visit in New York.

* * *

Theodore Cady, assistant to the vice president of the White Eagle Oil & Refining Company, spent a few days in Amarillo, Tex., during the past week.

* * *

Bill Hovis sales engineer for the Gardner Governer Company of Quincy, Ill. paid a visit to the lobbies of the Tulsa hotels last week.

* * *

R. B. Dudley, head of the land department of the Gibson Oil Corporation, has returned to Amarillo, Tex., following a trip to the East.

* * *

Wilson Flann, Oil City, Pa., superintendent of the northern division of the Eureka Pipe Line Company, telegraph department, visited Pittsburgh, Pa.

* * *

L. C. Harbert, sales manager of the J. P. Ratigan Company of Los Angeles, California, has been making a tour of the Mid-Continent and Gulf Coast oil fields.

* * *

F. W. Burford, vice president and general manager of the Crystal Oil Refining Corporation of Shreveport, La., was a visitor in Tulsa, Okla., the past week.

* * *

J. M. Shear, vice president of the Union Rubber Asbestos Company, Trenton, N. J., was a recent business visitor in the Coastal region of Texas and Louisiana.

* * *

John T. Crotty, president of the Republic Supply Company, of Houston, Tex.; R. E. Cole, district manager and Thomas O'Neil, general auditor, have been making a trip through the Panhandle and west Texas fields.

A. Verstege, arrived in New York last week on the S. S. Majestic from duty in foreign fields, and is en route to the Tulsa office of the Roxana Petroleum Corporation.

* * *

Blossom A. D. Richmond, of Sarnia, Ontario, has left via New York for Talara, Peru, where he will spend three years with the International Petroleum Company.

* * *

J. P. Massey has just resigned from the Richfield Oil Company to become affiliated with H. H. Maddren, manager of production for the California Petroleum Corporation.

* * *

E. E. Lippencott and J. P. Miller of the auditing department of the Atlantic Oil Producing Company at Philadelphia, Pa., visited offices of the company in Shreveport, La.

* * *

Mr. and Mrs. F. H. Cook and family, of Corunna, Ontario, left recently for Talara, Peru, where Mr. Cook will spend three years with the International Petroleum Company.

* * *

W. A. Gray, Jr., and W. M. Combs, both of New York City and connected with the engineering products division of the Walworth Company, were in Shreveport, La., last week.

* * *

James A. Hall, formerly chief engineer for the Kansas City Structural Steel Company is now chief engineer and general manager of the Pioneer Tank & Boiler Company of Tulsa, Okla.

* * *

O. C. Elliott, formerly Mid-Continent representative for the Wilson Oil Tools Corporation, has joined the Wickwire Spencer Steel Company as representative in the Mid-Continent.

* * *

W. S. Farish, president of the Humble Oil & Refining Company, has returned to Houston, Tex., from New York, where he negotiated the sale of a $25,000,000 bond issue for the company.

* * *

Joseph V. McGinity, who has returned from a South American trip for the Wilson Oil Tools Corporation, has been appointed Mid-Continent representative of that company, succeeding O. C. Elliott.

* * *

James A. Carroll Jr., for seven years in the auditing department of the Midwest Refining Company and for three years general auditor of that company at the Denver offices, will leave Denver shortly for Chicago to enter the offices of the Standard Oil Company of Indiana as general auditor. W. L. Greiner succeeds Mr. Carroll in the Denver offices.

* * *

Several changes have taken place in the personnel of the Vacuum Oil Company's scouting force. Arch A. Murrell has been transferred to the New York office of the company from Eastland, Tex. Harry Sample has been transferred to Eastland from San Angelo, Tex., and R. H. Brooks, who was with the Humble Oil & Refining Company in the Laredo section, succeeds Mr. Sample at San Angelo.

* * *

George H. Speary, of Speary and McFarland, Houston, Tex., is making a tour of the north central and west Texas fields. Mr. Speary was formerly general superintendent of the Texas Pipe Line Company, and later connected with the White Oil Corporation. He retired from the pipe line end of the business and became a successful operator in the north Louisiana fields.

* * *

Employes of the Magnolia Petroleum Company, at Pampa, Tex., Panhandle, were hosts at a banquet given Magnolia officials in the Texas territory. The guests were F. V. Faulkner, James Kilchenstein, William Ray, F. S. Lane and M. J. McLaughlin, all of Dallas, and Earl Vandale of Amarillo.

* * *

C. D. Avery, of Washington, D. C., with the land classification division of the conservation department of the United States Geological Survey, and H. B. Soyster of Muskogee, Okla., supervisor of the Mid-Continent district of the mineral leasing division of the survey, are checking up on government leases in Louisiana. They worked out of Shreveport, Monroe and Lake Charles this week.

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South Texas and Louisiana District
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El Dorado, Ark.
Houston, Tex.
Luling, Tex.
Mirando City, Tex.
*San Antonio, Tex.
xShreveport, La.
Smackover, Ark.

Central Ohio, Kentucky and Illinois District
xBreman, Ohio
Bridgeport, Ill.
Cambridge, Ohio
Casey, Ill.
Creston, Ohio
Lima, Oho
Logan, Ohio
Newark, Ohio
Winchester, Ky.

West Virginia District
Cairo, W. Va.
Charleston, W. Va.
Clarksburg, W. Va.
xParkersburg, W. Va.
*Sistersville, W. Va.
Marietta, Ohio
Woodsfield, Ohio.

Colorado District
*Denver, Colo.
xFlorence, Colo.

North Texas District
*Amarillo, Tex.
*Ardmore, Okla.
Best, Tex.
Breckenridge, Tex.
Corsicana, Tex.
Cross Plains, Tex.
*Dallas, Tex.
Duncan, Okla.
Electra, Tex.
xFort Worth, Tex.
Ison, Tex.
Mexia, Tex.
McCamey, Tex.
Olney, Tex.
Pampa, Tex.
Panhandle, Tex.
Ranger, Tex.
Wichita Falls, Tex.
Wilson, Okla.

Wyoming and Montana District
xCasper, Wyo.
Rawlins, Wyo.
Kevin, Mont.

Mid-Continent District
Bartlesville, Okla.
Blackwell, Okla.
Bristow, Okla.
Cushing, Okla.
Eldorado, Kans.
Eureka, Kans.
Garber, Okla.
Madison, Kans.
Olilton, Okla.
Okemah, Okla.
Okmulgee, Okla.
Ponca City, Okla.
Quay, Okla.
Seminole, Okla.
Shidler, Okla.
Stroud, Okla.
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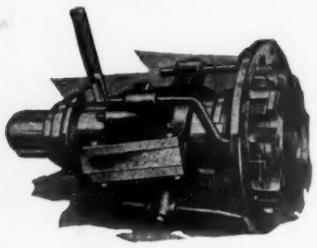
FRANKLIN, PENNA.

LESS ENGINES

EQUIPMENT AND SUPPLIES

NEW LINE OF TAPS MADE IN THREE GROUPS

The Victor plant of the Landis Machine Co. has placed upon the market a new line of taps, known as the Victor Style M Receding Chaser Collapsible Tap. This tap is designed for cutting tapered threads in tool joints, casing shoes, pipe couplings, pipe flanges, valve



bodies, fittings, etc. This new Style M Receding Chaser Collapsible Tap replaces the present style in sizes 4 inches and larger.

The Victor Style M Tap is made in three groups employing one body with a series of detachable heads in each group.

The body of the Style M Tap includes the cam collar, cam slide, cam, plunger extension, expanding collar, trip ring rods and minor details. The head of the Style M Tap includes the plunger, chaser blocks, chasers, tap and trip ring. The head is made of 1,045 S. A. E. steel, heat treated and ground all over, including the seat of the chaser block slots. It is bolted to the flanged end of the body of hollow head socket screws placed in the bottom of the chaser block slots. Ground surfaces on both the head and body insure alignment. A heavy key is inserted between the body and the head to take the driving strain.

The chaser blocks are made of 1,045 S. A. E. steel, hardened and ground all over. These blocks are interchangeable among all the heads in Group 1—(4-inch to 5-inch) and are interchangeable in all heads in Groups II and III—(6-inch to 24-inch).

In as much as the chaser blocks are permanent parts of the tap, there is no danger of variation each time the chasers are changed. This construction also permits using shorter chasers at less cost.

The chasers, it is stated, are all made of high-speed steel and ground all over. The threads are ground after hardening to insure absolute accuracy of form and lead and to give maximum service.

The plunger of the Style M Tap is made of 1,045 S. A. E. steel, and is hardened and ground all over. The trip ring is also made of 1,045 S. A. E. steel. It is hardened and ground to provide maximum wear on account of contact with the work during the tapping operation. The holes for attaching the trip ring rods are so placed that the same rods will fit all rings in the same group. A separate trip ring is required for each size of head.

The body of the tap is made of 1,045 S. A. E. steel. It is internally and externally ground to afford proper fits for all working parts.

The cam collar is a semisteel casting which carries a cam slide and cam. Its position on the body and distance which it moves along the body determine the length of thread being cut. The cam slide is made of tool steel, hardened and ground all over. It is inserted in the top of the cam collar and carries the cam as the collar recedes. The cam is also made of tool steel, hardened and ground on all sliding surfaces. The top is milled for cutting any two tapers of thread by proper pivoting in the cam slide.

The expanding collar on the tap is to expand the chasers and set the cam collar in the tapping position when the tap is rotated. A straight forward or downward pressure against the collar will accomplish this. This is usually done by means of a yoke ring engaging the collar on the return movement of the spindle while the tap is in motion.

FOREIGN SALES RIGHTS

The National Supply Co. has secured exclusive foreign sales rights on the Wiggins' underreamer. E. B. Wiggins has been in New York completing the deal. Recently additions were made to the Wiggins plant at Los Angeles, Calif., which will double its capacity and an additional force will be employed. The manufacture of the Wiggins underreamer was begun a little more than a year ago.

OPENS PANHANDLE PLANT

The Taubman Supply Co. has opened a new plant at Phillipstown, Tex., 2 miles from Borger, and at the end of the Panhandle-Isom-Borger line of the Santa Fe Railroad. Ford Carman is manager, with O. L. Hutchinson as assistant. The Taubman company has branches in Dallas, Breckenridge and El Dorado, Kans., with general offices at Tulsa.

OPENS NEW YORK OFFICE

C. F. Braun & Co. announce the opening of a sales and engineering office at New York City in the French Building, 551 Fifth Avenue, with William D. Moorer as manager.

APPOINTS REPRESENTATIVE

The Young Engine Corp. of Canton, Ohio, announces the appointment of H. A. Laurence of 2507 Commerce Street, Dallas, Tex., to represent them in the Mid-Continent fields.

TRADE LITERATURE RECEIVED

From the Bridgeport Machine Co., Wichita, Kans., the current issue of the Bridgeport Driller.

The Kerotest Manufacturing Co. of Pittsburgh, Pa., makers of Kerotest steel field valves, has distributed folders on their valves and pictures illustrating oil field fires which they claim would have been averted by the use of their product.

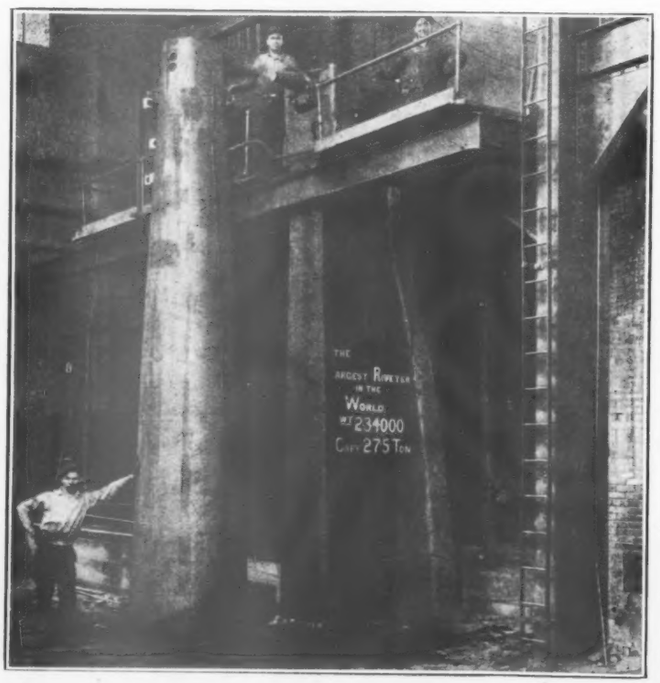
From Smith Welding Equipment Corp., Minneapolis, Minn., a copy of the 1927 Junior Catalogue printed by that concern. It is a convenient pocket size which illustrates, describes and gives prices on oxy-acetylene equipment.

From Engberg's Electrical & Mechanical Works, St. Joseph, Mich., a folder showing the engines and generator sets which that company manufactures, and giving the details of their application and use.

From the International Nickel Co., New York, a booklet entitled "One Hundred Years of Steel Improvement." This is really a sequel to a booklet previously issued and called "Paving the Way for Alloy Steel. The new booklet deals with a subject which is rather new and about which very little is known by the average man.

From the American Asphalt Paint Co., Chicago, Ill., a beautifully assembled and printed booklet entitled "Asphalt Through the Ages." This interesting booklet portrays the part asphalt or bitumen has played in many sides of ancient and mediaeval life including its use in preservative works. The booklet is perfectly illustrated, and contains many notes of historical interest.

LARGEST RIVETER IN THE WORLD



The Henry Vogt Machine Co. of Louisville, Ky., installed the riveter pictured above. It is said to be the largest riveter in the world and was necessary to fabricate heavy plate pressure vessels for oil refineries and other plants where extremely high pressures and temperatures are involved. It is designed for a capacity of 275 tons and is capable of setting rivets to a maximum of 2½ inches.

TO TREAT SULPHUR GAS IN TEXAS PANHANDLE

The Gulf Production Co. has recently contracted for the installation of a liquid purification plant for treating the high sulphur gas which is being produced on its McElroy lease in Crane and Upton Counties, Texas. The gas as produced in this field contains from 8 per cent to 12 per cent hydrogen sulphide by volume and from experience gained in other fields is known to cause serious difficulties when used as fuel in gas engines. By the proposed treatment the hydrogen sulphide content of the gas, it is stated, will be reduced to 1 per cent or less. The treated gas will then compare in sulphur content with a large part of the gas produced in the Panhandle Field which has been used in operating the leases without any serious difficulties.

This treating plant, which will be in operation in the near future, will have a capacity sufficient to provide purified gas for present and future operating requirements and will also provide gas for use in the Gulf company's camp. The process to be employed was developed and patented by the Koppers Construction Co. of Pittsburgh, Pa., which has designed and fabricated the equipment to be installed.

The process to be employed consists in scrubbing the gas with a dilute solution of sodium carbonate. This solution which then contains the absorbed impurities is regenerated for reuse by aeration. Over 40 installations of this process have been made in this country and abroad by the Koppers Construction Co. Both natural and manufactured gas under high and low pressure and containing various amounts of hydrogen sulphide are reported to have been successfully treated.

E. S. BLACK REJOINS AMSCO

E. S. Black has rejoined the American Manganese Steel Co., with his headquarters at Chicago Heights, Ill. His duties are those of consulting engineer, both mechanical and sales. Mr. Black has had extensive experience in the steel industry generally and intimate contact with the manganese steel castings business in all its phases, over many years. A. H. Exton has also rejoined the Amsco organization, in the capacity of chief engineer. Mr. Exton is an authority in the design and manufacture of manganese steel castings.

DUNN SALES MEETING

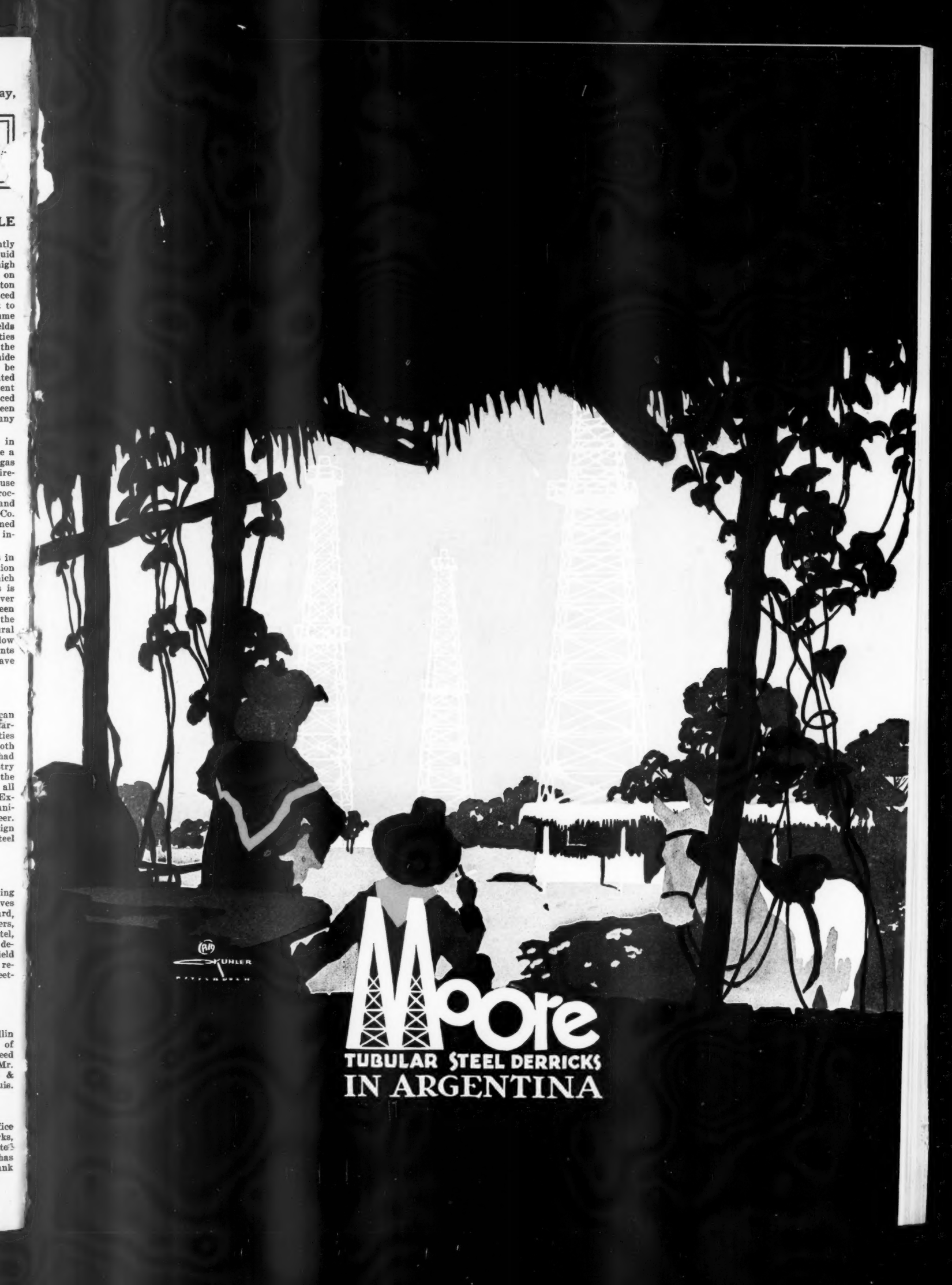
A gathering and get-together meeting of the Mid-Continent Field representatives of the Dunn Manufacturing Co., Oxnard, Calif., tool and equipment manufacturers, was held March 5 at the Texas Hotel, Fort Worth, Tex. Future program development discussions and general field situation discussions rounded out the reunion. It is planned to make the meetings an annual program.

A. J. DAVIS VICE PRESIDENT

The board of directors of the Scullin Steel Co. has elected Albert J. Davis of St. Louis as vice president, to succeed G. L. L. Davis, who has resigned. Mr. Davis is president of the Merchants & Manufacturers Association of St. Louis.

DALLAS OFFICE CHANGE

The southwestern district sales office of the Chicago Bridge & Iron Works, which for several years has been located in the Praetorian Building in Dallas, has been moved to the Dallas National Bank Building in the same city.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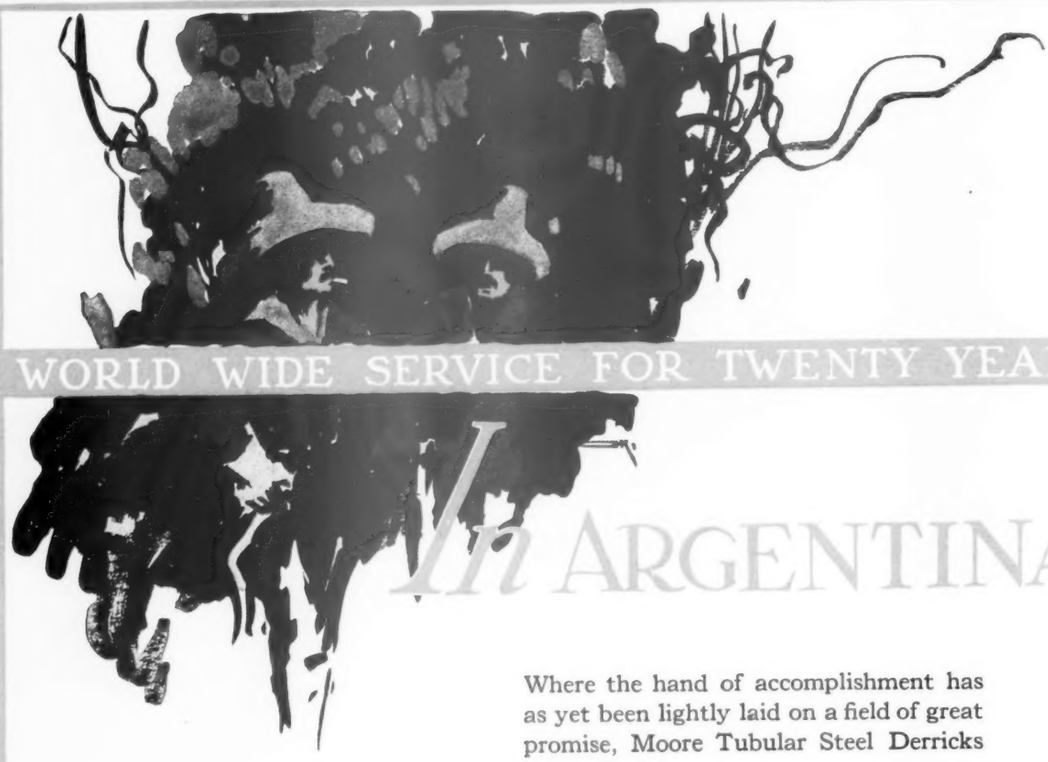
IN ARGENTINA



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Prevention of Oil Field Accidents

Bureau of Mines Report Suggests Precautions to Be Taken for the Safety of Workers

By H. C. Miller
Bureau of Mines, Department of Commerce

WASHINGTON, D. C., Apr. 9.—More operators are beginning to realize that safety is essential to efficiency, that efficiency results in lower costs, and no successful operator can afford to carry on his operations without protecting those in his employ.

Employes should feel they are a part of the safety movement and should welcome every provision made to safeguard places and conditions. They must do their part by always being careful.

Falls of workers can be avoided by railings around the exposed edges of platforms, or, if the platforms are inside the derrick where railings are not practical, the use of safety belts and life lines will eliminate many accidents. Many accidents caused by workers falling from derrick ladders can be prevented by the proper construction of ladders, by enclosing them in cages of wire netting and by offsetting them at short intervals. Toe boards on exposed edges of all outside platforms will in a large measure prevent tools and materials from falling on those below.

Danger of Collapse

Other inherent dangers exist at many derricks that result from conditions usually beyond the control of the drilling and producing crews. The partial or total collapse of the derrick, although relatively infrequent is the most serious. The major causes are improper design of the derrick, faulty materials and construction, deterioration due to age and vibration and the softening of the ground under the derrick footings by water. These causes either singly or in combination are responsible for a large number of the derrick failures causing injuries.

Rig Builder's Responsibility

Improper design cannot be tolerated as an excuse. If competent and reliable rig builders are employed, they can be depended upon to reject all faulty materials and to erect the derrick in a workmanlike manner and along the lines of best engineering construction. Deterioration due to age cannot be entirely avoided but can be materially reduced. The life of wooden derricks will be prolonged by the erection of proper lumber and by coating it with a preservative against rot where such is liable to occur. Scraping off the rust and painting the exposed metal where rusted, will prolong the life of steel derricks and will tend to maintain their original strength. Much of the deterioration due to vibration can be eliminated by renailing the wooden derrick when necessary, and by maintaining the bolt nuts on all steel derricks tight. Proper maintenance of wood and steel derricks also requires guys with turnbuckles or other tightening devices that can be used to take up small amounts of slack and which do not put sharp bends in the guy wires as is done with ordinary board tighteners in which the line is twisted around a couple of 20d. spikes.

Softening Ground a Danger

A serious and insidious cause of derrick failure is softening of the ground under the derrick footings by water from hosing off derrick floors, rains, flowing water, sands, etc. The safe bearing power of the soil is often reduced by actual solution or removal of fine soil particles by water filtering into dry soil. Often this softening is not accompanied by any perceptible settling until the derrick is loaded by a pull on the casing. The footings will then give, throwing a twist into the derrick causing it to collapse, sometimes straight in on the floor and at others the twist may throw the derrick in any direction.

Hazardous Exposures

It is good business to construct substantial guards of a permanent character over all hazardous exposures. There is no economy in constructing makeshift guards which must be replaced or repaired frequently.

Safeguards will not prevent all accidents due to machinery but a management emphasizes the importance of self-preservation by installing safeguards and proves to the employes it has taken an interest in protecting them.

Safeguarding Belt House Roof

In addition to guarding the machinery at pumping wells a means of safe access to and from the belt house roof should be provided. There should be a railed platform on the belt house roof so that the walking beam bearings and the pitman bearing can be oiled in safety. A ladder on the side of the derrick extending from the railed platform on the roof of the belt house to the top of the walking beam will allow workmen to climb on the beam in safety. A hand rail on that part of the walking beam which is inside the derrick will assure safety to the worker who must go out on the end of the beam to work on the temper screw or on the equipment on which the sucker rods are suspended.

When Foundations Settle

Foundation pier settling one-half inch will bring the crown blocks of 114-foot derrick 3 inches out of alignment. A slight displacement at the derrick crown, when parallel to the crown block I-beams can be corrected by shifting the pulley boxes. Steel I-beams are usually provided with a number of extra belt holes or the pulley boxes are equipped with hook bolts which grip the under side of the web of the I-beam, making it possible to shift boxes to any desired position along the beams. Such practice is permissible and safe because the possible amount of shifting is so slight that no serious change will take place in the distribution of the loads on the four derrick legs.

Drillers' Dangerous Practice

When the displacement of the derrick crown is greater than can be corrected by shifting the pulley boxes or if the movement has not been parallel to the I-beams, many drillers shift the crown blocks in their entirety to again make the sheaves line up with the hole being drilled. This is dangerous practice as the I-beams should have a full bearing on the bumper timbers. Shifted crown blocks, resulting in broken bumper timbers, falling crown blocks and collapsed derricks, have been the cause of many oil field accidents. Such accidents can be averted by jacking up and shimming under the low corners of the derrick. After the derrick has been brought back to plumb, all guy wires should be inspected for kinks and weak spots and made taut.

Drilling Derrick Foundations

With other conditions equal, the fewer stands per depth of hole, the greater the speed at which a well can be drilled. Derricks for rotary drilling vary generally in height from 96 to 122 feet. In cable drilling practice where the height of the derrick is determined by the length of the string of drilling tools, derricks vary in height from 62 to 84 feet. In California, where the rotary method of drilling is almost always used, a depth of 7,591 feet was reached by the drill and well depths of over 5,000 feet are common. In Pennsylvania where wells are drilled by cable tools, a well reached a depth of 7,756 feet. Preparations have recently been made in West Virginia to drill a well by cable tools to 10,000 feet unless oil or gas is found at a lesser depth.

Maximum Loads

In determining the maximum load that the foundations of a 114 and 122-foot heavy California type derrick should carry without appreciable settling, it is assumed that nine 1-inch lines are the most used at any time for hoisting drilling tools and casing. On this basis the maximum load on each foundation pier is found as follows.

Breaking strength of 1-inch diameter plow steel wire line=76,000 pounds.

9 + 76,000 = 684,000 pounds = total breaking strength of nine lines.

56,000 pounds=approximate weight of wood derrick, crown blocks, etc.

684,000 + 56,000 = 740,000 pounds = total actual weight on the four foundation piers.

$$\frac{740,000}{4} =$$

185,000 pounds or the weight on each pier.

Since very few derricks are absolutely plumb, the load is not always equally divided on the four piers and it is necessary to make some allowance for this. Just what this added weight may amount to is indeterminable. It is considered, however, that a total load of 200,000 pounds or 100 tons on each foundation pier is within the limits of safety.

Chapter on Derrick Cellars

Many derricks have cellars varying in depth from 8 to 16, or more, feet. In area the cellars usually vary from 8 by 8 to 10 by 10 feet. The depths of cellars depend upon the opinions of different operators and upon the two methods of drilling employed. For rotary drilling, a depth of 10 or 12 feet below the sills of the derrick is adequate and provides ample headroom for all the casing connections and fittings that may be required. Operators using the cable tool method excavate their cellars to depths of 16 to 20 feet. Deep cellars are advantageous in cable tool drilling, especially in localities where unconsolidated sands are encountered. Under such conditions the driller is compelld, in many cases, to work the casing far enough below the derrick floor to give sufficient clearance to screw on another joint.

Whenever the depth of cellars in loose or cavey ground is greater than 5 feet, the sides should be protected by sheeting and shoring so they will not cave and entomb or injure the workers. The sides of all deep cellars and those of shallow cellars that are liable to cave should be protected permanently. Square frames placed horizontally with vertical lagging planks, or walls of concrete thick enough to hold back the ground, are the two methods best suited to prevent cellar walls from caving. Where concrete is used for wall material, the floor is likewise made out of concrete. Derrick cellars are usually dug by hand and shored as depth is gained, if the ground is cavey. In sandy and swampy territory it is often necessary to use wooden sheet piling from the surface down.

Means of Exit

Every cellar should have a means of exit leading from the bottom to the surface of the ground. This may be a stair-

PIPE LINE CONSTRUCTION PLANS IN WEST TEXAS PRODUCING AREA

By P. L. McGreal

HOUSTON, Tex., Apr. 11.—Development work in the West Texas counties of Upton, Crane, Pecos, Winkler, Crockett and Glasscock has reached the proportions where at least one of the major oil corporations feels justified in spending millions of dollars to provide pipe line facilities. Furthermore, the proposed line will traverse a section of Texas which the pioneer oil operator in his wildest dreams never considered within the range of pipe line facilities. In addition, it will be a combination of 10 and 12-inch pipe. The old standard 8-inch line has gone out of style. The young, modern pipe line executives of today run to large size pipe lines because they can transport more oil.

The Humble Oil & Refining Co. will use the greater part of the proceeds of its recent bond issue of $25,000,000 to lay a pipe line of 10 and 12-inch pipe from the present Crane-Upton Field southeastward to its terminus at Ingleside on Corpus Christi Bay. The proposed line will be approximately 400 miles long. The preliminary survey is being started and when this is completed and rights of way secured the sites for the pumping stations will be determined. All reports that work on the line has actually started are premature, according to officials of the Humble Pipe Line Co. at the general offices here. The pipe line company is a subsidiary of the Humble Oil & Refining Co.

Equipment and Capacity

The line will have a capacity of 40,000 bbls. per day, due to the larger sized pipe. Each station will be equipped with three pumps and three oil engines. One unit will be in reserve and the other two will handle from 20,000 to 25,000 bbls. per day each. The engines will have 400 horsepower capacity. This larger-sized pipe and larger engines and pumps have become the order of the day with the modern pipe line executives and mechanical engineers. The Humble Pipe Line Co. has set the pace in this respect in the Southwest.

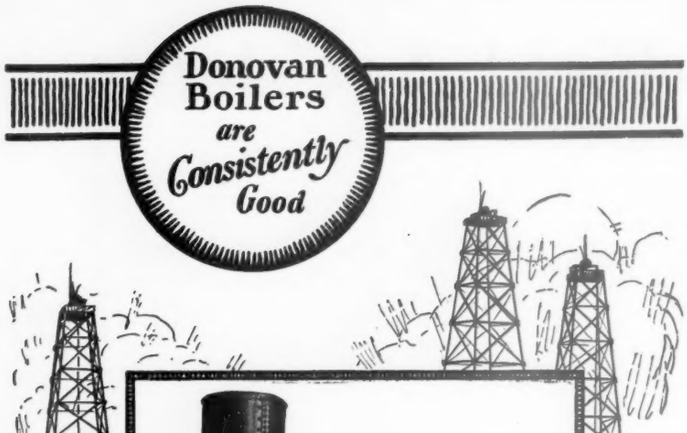
The officials are averse to making public at this time the route they have in view for the proposed line, giving as a reason the fact that landowners would take advantage of the information and in some cases probably put a prohibitive price on sites for the pumping stations and tank farms.

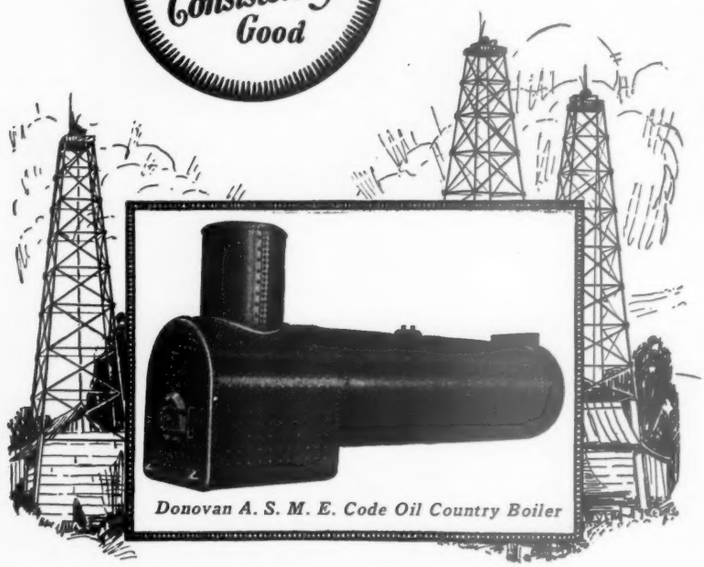
The topography of the country is rough west of a north-south line in the vicinity of San Antonio. The natural drainage is toward the Rio Grande. Southwest of San Antonio the slope is gradual toward Corpus Christi Bay.

The cost of the line is estimated at from $8,000,000 to $10,000,000. The estimate on the old 8-inch lines was about $10,000 per mile. The increase is due to the increased size of the equipment, but the capacity of the new line is about double that of an 8-inch line.

The line will have its eastern terminus at Ingleside, where the present 110-mile line from Bruni, in the Mirando district, terminates. The suggestion to tie into the Bruni line was abandoned when it was decided to use 10 and 12-inch pipe. The Ingleside terminals will be enlarged. At present the Mirando crude is shipped in tankers from Ingleside to Texas City

(Continued on Page 102)

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way, inclined runway or a ladder. Experience shows that stairways and runways are safest and best for cellars over 16 feet deep. Stairways and runways should be at least 3 feet wide and there should be a minimum clearance of 7 feet between the floor of the stairway or runway and the derrick sills. According to the Industrial Accident Commission of the State of California, the slope of cellar stairways should not exceed 50 degrees from the horizontal. The maximum slope for inclined runways should not exceed 20 degrees. The sides of the runway and the excavation for the stairway should be protected against caving by sheeting and shoring. Derrick cellar exits should provide at all times an unobstructed passage out of the cellar.

Ladders may be used only in cellars that are 16 feet or less in depth. When they are built out of thoroughly seasoned straight-grained lumber, free from knots or other serious structural defects, they are considered safe means of exit. To secure the highest degree of stability and safety, ladder rails should be 2 by 6 inches in section, to which 1 by 6 inch rungs are nailed securely.

Ladder and stairway openings in the derrick floor should have trap doors or covers that can be kept closed except when men are working in the cellar. In cable tool drilling it is almost important to have well fitted floor boards in the cellar opening through which the blocks travel. These should be kept in place at all times, except when handling pipe. Many men have been injured by falling into derrick cellars through such openings.

Cellars that are not equipped with a gravity drain can be kept dry when steam is available by steam jet. When a well is being drilled by electricity, and steam cannot be had, a small motor driven pump can be used. A manually operated diaphragm pump will keep a cellar dry when no mechanical power is available. To accommodate the jet or pump suction, a pit about 18 inches square and 12 inches deep is built in the floor of the cellar at one of the corners. In order that the floor can be kept dry, it is sloped from all directions to the suction pit.

Covering Steam Lines

Steam lines to jets in derrick cellars have been the cause of many burns to oil workers, especially when placed near the ladders and stairways. Men who become unbalanced and fall from cellar ladders or stairways unconsciously grab at anything within reach to check their fall and many hands have been severely burned in this manner. There are records also where men working in the cellar have backed against hot steam lines and have been burned seriously. Such incidents can be guarded against by locating the steam line in the corner of the cellar diagonally opposite the ladder or stairway. If, for some reason, it is impossible to do this then that portion of the line in the cellar should be covered with an insulating material, or otherwise enclosed.

Gas Accumulation in Cellars

Gas often collects in derrick cellars while drilling a well, to such an extent that it is dangerous to go down to handle spider slips, drive clamps and tools. The gases which accumulate in derrick cellars are petroleum vapors and hydrogen sulphide, either occurring singly or as a mixture of the two. Hydrogen sulphide is a much more poisonous gas than petroleum vapors and quickly causes unconsciousness and death. Fortunately only a few petroleums such as some found in Mexico, Canada and in the Lima Field in Ohio are known to contain hydrogen sulphide in solution, which is given off when the crude oil is exposed to the air.

Regarding the dangers from hydrogen sulphide gas or petroleum vapors and the necessity of using suitable gas or hose masks is insisted upon. The canister type gas mask is restricted to certain definite atmospheres and does not protect against concentrations of petroleum vapors in air exceeding 5 per cent by volume or in concentrations of hydrogen sulphide exceeding 2 per cent. Self-contained oxygen breathing apparatus protects against all deficiencies of oxygen. Workmen using hose masks should be cautioned against using any other hose than that supplied with the masks or made especially for hose masks.

When access to a derrick cellar is necessary when no hose or gas masks are available, fresh air should be blown in to every corner and along the floors of the cellar through a hose or pipe until it is reasonably certain that the cellar has been freed of gas and vapors. A rope should be made fast to each man before he enters the cellar and attendants should be ready to pull him out in case he is overcome by gas.

Construction of Derricks

The construction of wooden derricks is very important as is the danger of failing to keep such derricks in repair, and the danger of pulling a string of casing that is fast in the hole, as it is impossible to know how severe a strain is put upon the derrick when it has been weakened. Members removed to obtain an opening into the side of the derrick for the purpose of bringing in tools and materials which cannot be brought in in any other way should be replaced. It must be remembered that this removal has reduced the strength of the derrick as a whole. Too much emphasis cannot be placed on frequent inspection of the derrick for loosened members and unsecured material.

Guying Derricks

There are different opinions as to how a wooden derrick should be guyed and as to the number of guy wires necessary to protect a derrick against overturning in a heavy wind. A canvass of many oil fields shows that some operators consider guy wires unnecessary while others use one, two, three or four to each derrick leg. Experience in the industry indicates that four guy wires to a leg are necessary to safely guy 106, 114 and 122-foot derricks against an 80-mile-an-hour wind. Three wires to each leg of 72 to 96-foot derricks and two to each leg of shorter derricks are necessary to resist the overturning forces of a strong wind. Table 3 represents good practice brought out by experience in the oil producing industry as to the number of guy wires necessary for wooden derricks of various heights and the approximate height of the tying point on the derrick leg above the derrick floor.

Table 3. Number and size of guy wires and approximate height of tying point on the derrick leg above the floor for wooden derricks of various heights.

Hgt. of derrk. (ft.)	No. of guy wrs. per leg	Dia. of guy wr. (ins.)	Approx. tying point on derrick leg above derrick floor (ft.)			
			1	2	3	4
122	4	5/8	26	50	74	106*
112-114	4	5/8	26	50	74	98*
106	4	5/8	26	50	74	90
96	3	5/8	26	50	82	
82-84	3	5/8	26	50	74	
72-74	3	5/8	26	50	66	
62-64	2	5/8	26	50		

*7/16-inch diameter guy wire recommended.

Proper Placing of Guy Wires

It is important that the first guy wire be attached well down on the derrick leg. In heavy windstorms, derricks have usually failed at a point about half way between the derrick floor and the point where the lower guy wire was attached to the derrick leg because the guy was tied too high. Derricks have actually "blown out" from under the guys when too great a distance above the derrick floor was left unsupported. For this reason the lower guy should be tied to the derrick leg at the third girt.

Steel derricks withstand the overturning force of winds of high velocity more successfully than wooden derricks because of the smaller surface exposed. This fact was one of the outstanding features of the windstorm which leveled nearly 1,300 derricks in Arkansas, Oklahoma, northern Louisiana and Kansas on March 28, 1924. Although there were many steel derricks standing in the path of the storm, only a few were blown over.

Steel derricks are not self-sustaining in a heavy wind unless bolted to foundation piers of sufficient weight and size to give ample stability to the structure. Even then, many operators guy them for additional protection to rigid dead-men. Small piers are of no material value in resisting the overturning effect of a wind

against the derrick. Experience shows that fewer guy wires are necessary and that they can be tied higher on steel derricks than on derricks of wood construction. The customary practice on 74-foot derricks is to tie the guy wires to the legs at the fourth and eighth girts.

There are no better materials for the construction of dead-men than concrete and steel. On this subject there is also very extensive detail instruction.

Falls From Elevations

One of the most important factors in accident prevention work in the oil fields is the elimination of falls of workmen from elevations. In the year 1923, in California, 65 oil workers fell from the derrick. The total time lost because of these accidents was 56,263 days, 8 of the accidents having been fatal. In Wyoming recently, within a period of several weeks, two men fell from the crown of oil derricks. One was killed instantly and the other received injuries that confined him to the hospital for months. Both were working on the crown blocks of derricks not equipped with working platforms and railings. A gust of wind blew one man off and the other became overbalanced during the course of his work and fell off backwards. A reoccurrence of similar accidents can be prevented by providing platforms and railings at the crown of every derrick on which men work. Good practice also calls for an outside platform at every level of the oil derrick where there is an inside working platform. Walking along a derrick girt to reach an inside platform after stepping off the ladder is hazardous practice. Experienced workers, as well as those not accustomed to working derrick, may become dizzy and fall when following a practice of this kind. Their handhold may give way or feet slip, causing them to fall to the ground casing injuries that may be serious if not fatal.

Outside Platforms

For rotary drilling, there should be outside platforms across the ladder side of the derrick at the double, triple and kelly levels. At those levels, the inside platforms are on the ladder side of the derricks and safe access to them from the outside platforms can be had through the open spaces between the derrick girts and braces. An outside platform, encircling the derrick should be built at the fourble level, for derrick men may be called upon to work in any one of the four inside corners of the derrick. At pumping wells, when the sucker rods are hung in the derrick in place of being "laid down," an outside platform is required to safely reach the inside rod platform. In the 114 and 122-foot derricks, this inside rod platform is about 90 feet above the derrick floor. Because it is located on the side opposite the derrick ladder, workmen have been compelled in the past to walk around on the derrick girts to reach it. This exceedingly hazardous practice has been eliminated and made safe on many derricks by constructing an outside platform at this level. This platform is built from the ladder around the outside of the derrick to the opposite corner.

In cable tool drilling practice, an outside platform across the ladder side of the derrick at the rod and tubing board will prevent workmen from falling when getting on and off the derrick ladder at this level. Through rod and tubing platforms are not needed while drilling a well with cable tools and are seldom installed until it becomes necessary to pull the tubing or rods, it is nevertheless economy to construct the outside platform at the rod and tubing board level at the time the derrick is being built.

Railed platforms completely surrounding the crown of derricks give workmen the protection needed at this elevation. All outside derrick platforms should be at least 2 feet wide. Those on the ladder side of the derrick should have a 2 by 2-foot opening to permit the free passage of men climbing the derrick ladder. The outer edges of all outside platforms should be equipped with a substantial railing 42 inches high with an intermediate rail 18 inches above the floor. Railing uprights should not be over 8 feet apart. Toe boards placed at the outer edges of the platforms will prevent loose material and tools from falling off the platform on those below. Toe boards 6 inches high are recommended for all except the crown platform and there a 12-inch toe board is desirable. Several recent accidents indicate the need of an extra high toe board at this level. When changing sheaves, drilling crews have at various times leaned crown sheaves against 6-inch toe boards which are not high enough to prevent the large diameter sheaves now used in rotary drilling practice from overbalancing and falling to the derrick floor. Such accidents have been entirely eliminated in California where 12-inch toe boards are required on all crown platforms. The practice of leaning sheaves, bars, tools and material against platform toe boards should be discouraged. All loose materials and tools should be laid flat on the platforms so that if kicked or made to roll they will bump up against the toe boards and in no wise endanger the workmen below.

Platforms on Derricks

The material for virtually every steel derrick for rotary drilling now erected in California and Oklahoma oil fields where legislation has been enacted requiring platforms on derricks includes channels, angles, and bars for outside safety platforms with railings and toe boards. Little attention is being given in some parts of the country to the construction of safety platforms inside the derrick. Safe practice in rotary drilling, using 114 and 122-foot derricks, demands at least double thickness of 2-inch planks for the floors of the rod and fourble platforms. Greater thickness is needed for double and kelly platforms because they are longer than rod and fourble platforms. The span between girts at the double and kelly platforms is nearly 21 feet for the 114 and 122-foot derricks having a 24-foot base and though a sound 2 by 12 inches Texas Yellow, Oregon or Georgia pine plank with a span of 21 feet will support a 200-pound load at its center, it will not safely support the weight of a man when moving back and forth as he does when working at these levels. To avoid accidents resulting from failures of these platforms, and there have been many, experience shows that three thicknesses of 2-inch, or two 2½ or 3-inch planks spiked together should be used for double and kelly platforms.

Falls of workmen from double and kelly boards are frequent because of accidents but in nearly every case the workmen were at fault after the employers had done everything possible in providing safeguards.

Derrick Ladders

Derrick ladders shou'd extend from the floor to the crown. When ladder sections are offset it is necessary for safety to build railed platforms or landing places between the offset sections. There should be a landing platform at the bottom of the upper ladder to prevent a worker from misjudging his step and falling when descending. Furthermore, to get from one section of the ladder to the other requires walking on the 2-inch edge of the derrick girt and depending upon a diagonal cross brace for a handhold. Two rig builders with approximately 100 board feet of lumber could build a railed platform along the girt between the ladder sections in about one hour's time. The cost of such a platform will not exceed $5 or $6.

Ladder Specifications

The following are specifications for wooden ladders for oil derricks. These are being followed by the majority of rig builders throughout the oil producing states:

1. Lumber to be of straight grain, free from all structural defects.
2. Minimum cross-section of ladder stringers, 2 by 4 inches.
3. Minimum cross-section of ladder rungs, 1 by 4 inches.
4. Minimum distance between stringers, (center to center) 12 inches.
5. Maximum distance between centers of rungs, (center to center) 16 inches.

Many operators prefer 2 by 6-inch stringers and 1 by 6-inch rungs and much can be written in favor of these sizes. The safest ladders to climb have the 2-inch edges of the stringers against the derrick so there is at least 4 inches be-

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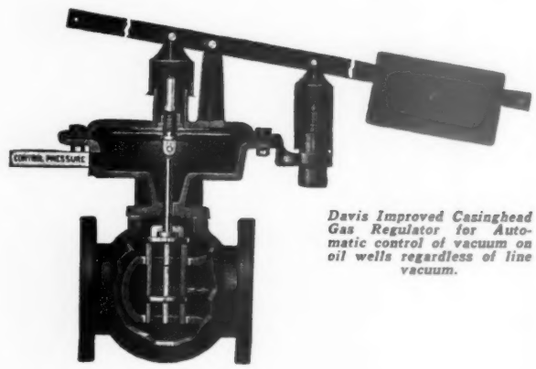

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tween the rungs and the derrick members. Care should be taken to avoid any obstruction which would decrease this clearance and interfere with a safe foothold on the ladder rungs. Ladder stringers should extend at least 42 inches above platforms. Such construction makes for safety by providing a handhold for the climber when stepping on and off ladders. Experience shows that bolting the top and bottom of ladder sections to the derrick members, so as not to depend upon the uncertain holding power of nails, is good practice. Nailing or stapling two-strand coppered or galvanized twisted wire along the ladder stringers and over the ends of the rungs will prevent the rungs from pulling away from the stringers. Box strapping is also used for this purpose. This wire or metal strapping should be continuous from top to bottom of the ladder section. Some operators cover the ends of ladder rungs with narrow strips of lumber. Where strips of lumber are used in place of wire or strapping to hold the rungs from pulling off, none smaller than 1 by 3 inches in cross-section should be used. Some operators drive 10d nails for about half their length into the ladder stringers just above and below the rungs after the rungs have been nailed on. The projecting part of the nails are against the outside face of the rungs. This is a precaution against the splitting and pulling off of the rungs and is good practice when twisted wire or strips of lumber are not available.

A great many companies operating rotary equipment are building derrick ladders in sections and offsetting these sections every 16 feet up the side of the derrick, because in the majority of falls, the shorter the distance fallen the less severe the injury. A railed landing is constructed between each of these 16-foot sections. Offset ladders have not as yet been used on cable tool derricks. Operators of rotary equipment have reduced appreciably the numbers of falls from derrick ladders by offsetting derrick ladders at 16-foot intervals. Cable tool operators can do likewise by equipping their derricks with ladders of similar construction.

Finger Boards

Many accidents at oil derricks can be attributed directly to faulty finger boards at the fourble platform. Deep drilling operations, where 60 or more stands of drill pipe or tubing may be stacked in the derrick at one time, require sturdy finger boards against which to lean the pipe. One can easily imagine the result, should a finger board give way and allow the stacked pipe to fall against the opposite side of the derrick. Although such accidents do not happen frequently there have been many which were caused when torn off finger boards or parts of finger boards fell on workers on the derrick floor. Traveling blocks and elevators hit and break off the finger boards frequently when going up or down the derrick. Finger boards must by necessity project a considerable distance out beyond the working edge of the platforms. Therefore, they should be made of structurally sound timber not less than 6 by 6 inches in cross-section and well bolted to the platform. Some operators tie the end of the finger board to a derrick member by a wire line. This line prevents a finger board from falling to the derrick floor when broken off by a string of pipe or line blocks. Ordinary ¾-inch line such as is used for derrick guy wires is well suited for this purpose and will hold a broken off finger board from falling. Sometimes the unsecured portion between the end of the finger board that is tied by wire to the derrick and the decking plank of the platform is broken and falls to the derrick floor. It is therefore advisable to prepare for such a happening by nailing or stapling wire along one entire side and the bottom of the finger board. The possibility of any part of the finger board falling is remote if the loose end of the wire is then securely tied to a derrick girt or brace.

Safety Belts

Safety belts with life lines should be provided for use at every working platform and at every point above the derrick floor. A wire cable or metal rod to which the life line can be attached should be strung from one derrick leg to the adjacent leg completely around the inside of the derrick. The experience in the oil fields has been that workmen can most readily attach the life lines to these wire cables or metal rods when they are placed between 3 and 4 feet above the platform levels. Used sand lines and sucker rods are most frequently used for this purpose. Sucker rods are best for this work as they can be bolted to the derrick legs and will not sag or give. The flexible life line from the safety belt is attached to the cable or rod by a large harness snap or similar appliance. When attached in this manner it can be quickly taken off and snapped on. The snaps should be large enough to slide freely along the cable or rod from one derrick corner to the other. This gives the wearer freedom of movement from one derrick corner to the next with a constant length of life line. When men working on walking beams or elsewhere in derricks where there are no inside platforms, the life line should be tied securely to a derrick girt or brace.

Life lines should not be longer than is absolutely necessary to allow free and unhampered movement of the person wearing the safety belts to which they are attached. A length of 5 feet is usually ample. In a recent accident a man fell from the fourble platform and dropped 18 feet before the life line checked his fall. The abrupt stopping of the fall from so great a distance caused the single strap safety belt which he was wearing to injure him severely internally. In addition he received a painful injury to his head when jerked against drill pipe standing in the derrick. Had there been but 5 feet of slack in the life line he perhaps would not have been injured because of the fall.

Improved Type

There are two distinct types of safety belts in use in the oil fields, a single strap belt and an improved belt equipped with shoulder straps. The single strap belt is a belt from 2 to 6 inches wide which is fastened around the wearer and adjusted to fit by means of a belt buckle. The life line is attached to the belt by an iron ring through which the belt passes. In case of a fall, this felt if loosely strapped around the wearer will slip under his arms and hold him suspended by his arm pits. On the other hand, if tightly strapped, it will grip him around the abdomen and hold him suspended by the central part of his body with his head and feet down. In either case the belt may cause severe internal injuries. Wide belts when tightly strapped around the wearer are hot and uncomfortable in warm weather and for this reason if for no other, they are looked upon with disfavor by many derrickmen.

The improved type of safety belt, which is being adopted by many companies has a chest strap 2 inches wide and 48 inches long with shoulder straps 1½ inches wide riveted to the chest strap in the back. These shoulder straps pass through a D-ring where they cross in back and are looped around the chest in front and riveted. The life line which is attached to the D-ring is out of the way and offers no interference to the work of the wearer since the ring can not slide around on the belt. In case of fall, the belt grips the wearer around the chest and the shoulder straps hold him in an upright position, giving him free use of his hands, arms and legs.

One objection frequently voiced against the use of safety belts when working in the derrick and especially in territory of high gas pressure, is the length of time required to take off the belt in case of the necessity of a quick get-away from the derrick. To meet these objections, two types of quick opening safety belt buckles have been designed. In both types the old style buckle and tongue has been eliminated.

Derrick Lighting

From 15 to 18 per cent of all preventable accidents occurring in industrial plants are a result of insufficient lighting. There is special danger in improper and defective wiring for lights in and

(Continued on Page 101)

WEST TEXAS WILDCATS

(Continued from Page 38)

Gene Mays and others' No. 1 Hartgrove, NW SW Sec. 312, Mrs. A. Schmidt Sur. A-1,173.... Flowed salt water with little gas 1,550 ft.; shut down 1,595 ft.

Swoveland & Lewis' No. 1 Plants & Bacon, C E ½ Sec. 8, G. C. & S. F. Sur. .... Location.

COTTLE COUNTY

Sun Oil Co.'s No. 1 Tom Burnett, C NW SE Sec. 6, Blk. L. S. P. R. R. Sur. .... Drilling 375 ft.

CRANE COUNTY

Gulf Prod. Co.'s No. 1 W. N. Waddell, NE cor. Sec. 12, Blk. B-25, School Land.... Drilling 796 ft. with core drill machine.

McCamey & Zoch's No. 1 Cowden Brothers, cor. Sections 30, 31, 40, 41, Blk. X .... Top salt 995 ft.; drilling 3,256 ft.; contract depth 3,250 ft.

Prairie O. & G. Co.'s No. 1 Colette, SW cor. Sec. 36, Blk. 31, University Sur. .... Four bailers sulphur water per hour at 4,000 ft.; shut down 4,170 ft.

Zweifel and others' No. 1 W. H. Cowden, SE SE Sec. 16, Blk. X, C. C. S. D. Sur. .... Hole full sulphur water 3,050 ft.; shut down 3,275 ft.

CROCKETT COUNTY

Anchor Oil Co. (Cumberland) No. 1 Couch, C NE Sec. 18, Blk. QR, D. & S. E. T. R. R. Sur. .... Fishing bit 3,075 ft.

V. T. Bolin & Co.'s No. 1 P. C. Coates, NW cor. SW Sec 4, Blk. 2, I. & G. N. Sur. .... Shut down for pipe 930 ft.

George A. Henshaw, Jr., No. 1 University, 1,320 feet from S and W lines SW Sec. 5, Blk. 14, University Sur. .... Top salt 450 ft.; small show oil and gas 1,100-15 ft.; 300 ft. sulphur water 1,668 ft.; hole full sulphur water 1,725 ft.; drilling 1,830 ft.

J. K. Hughes' No. 2-B Powell, Sec. 63, E. L. & R. R. Sur.... Fishing for 18 joints 8-in.; total depth 2,535 ft.; shut down.

Magnolia Pet. Co.'s No. 2 Shannon, SE SE Sec. 9, Blk. BB, E. L. R. R. Sur. .... Hole full sulphur water 2,390 ft.; small show oil 2,385-90 and 2,992 ft.; drilling 3,310 ft.

William Shaffer and others' No. 1 University, C SE SE Sec. 9, Blk. 47, University Sur. .... Total depth 2,344 ft.; plugged back to 2,208 ft.; shot 10 qts. 2,170-95 ft.; shut down.

William Schaffer et al's No. 2 University, 1,350 ft. N and 2,610 ft. E of SW cor. Sec. 9, Blk. 47, Univer. Land.. Rig.

W. W. Donnelly, Young, Logan & Hult's No. 1 Pierce, C SW Sec. 150, Blk. O, G. H. & S. A. Sur. .... Rainbow show 454 ft. and 540 ft.; drilling 1,020 ft.

P. H. Williams' No. L. P. Powell.... Drilling 560 ft.

World Oil Co.'s No. 1 Schneeman, N and W SE cor. Sec. 57, Blk. BB, G. C. & S. F. Sur. .... Top salt 1,035 ft.; sulphur water 2,490 ft.; total depth 2,575 ft.; pipe parted.

Young & Cromwell's No. 1 University, C SE Sec. 23, Blk. 31, University .... Pay 1,160-65 ft.; shows at 1,505 and 1,574 ft.; hole full sulphur water 1,930 ft.; drilling 1,930 ft.; will run 5-in.

CROSBY COUNTY

El Capitan Oil Co.'s No. 1 O. L. Slaton, NW cor. SW Sec. 5, Blk. B-9, E. L. & R. R. Sur. .... Drilling 3,150 ft .

CULBERSON COUNTY

James H. Gardner and others' No. 1 Radford, C SE Sec. 29, Blk. 62, Pub. Sch. Ld. Sur. .... Drilling 390 ft.

DICKENS COUNTY

Bowser Mickels and others' No. 1 Pitchford ranch.... Shut down 3,250 ft., contract depth; may deepen.

Moutray Oil Co. and Clancey & English's No. 1 Blackwell, C SE Sec. 406, Blk. 1, H. & G. N. Sur. .... Shut down 3,509 ft.

Moutray Oil Co. and Clancey & English's No. 1 Jones, SE cor. NW Sec. 311, Blk. 1, H. & G. N. Sur. .... Shut down 3,550 ft.; to deepen.

ECTOR COUNTY

J. S. Cosden, Inc., et al's No. 2 Connell-A, NW cor. NE Sec. 13, Blk. B-16, School Land.... Drilling 600 ft.

J. S. Cosden et al's No. 3 G. W. Connell-A .... Rig.

Exploration Co.'s No. 1 J. D. Slator, C SW Sec. 10, Blk. 45, T. & P. Sur., T-1-S .... (Reported abandoned at 4,003 ft.) Drilling deeper 4,395 ft., with slight rainbow show.

FISHER COUNTY

Sinclair Oil & Gas Co.'s (was Bourbon Royalty Co.'s) No. 1 J. A. Danise, Sec. 6, Blk. K, T. & P. Sur. .... Drilling 320 ft.

Marland Oil Co.'s (was Caldwell and others') No. 1 Rochelle, SW cor. NE Sec. 184, Blk. 3, T. & P. Sur... Total depth 3,535 ft.; underreaming 6-in. through water sand.

Marland Oil Co. and Texon's No 1 McCall.... Moving in rig.

California Co.'s No. 1 R. G. Anderson, Sec. 22, Blk. 20, T. & P. Sur. .... Hole full sulphur water 2,600 ft.; salt water 2,801-12 ft.; hole full salt and sulphur water 3,118-20 ft. and 3,208 ft.; shut down for underreamer 3,210 ft.

California Co.'s No. 1 Maggenheimer, SE cor. SW Sec. 15, Blk. 1, H. T. & B. Sur. .... Hole full sulphur water 2,826-2,937 ft.; hole full water 2,975-3,000 ft. and 3,055-70 ft.; shut down for orders 3,550 ft.

Danciger Oil & Refg. Co.'s (F. P. Zoch and others') No. 1 Lanius, NE cor. SE Sec. 15, Blk. Y, T. & P. Sur.... Drilling 3,490 ft.

Hucony Gas Co.'s No. 1 Langford, SW SW Sec. 7, Blk. 21, T. & P. Sur. .... Small show oil 2,350 ft. and 2,808-09 ft. and 2,826-27 ft.; no gas; set 6-in. 2,728 ft.; small show oil 2,947-50 ft.; repairing boiler 2,962 ft.

Ideal Oil Co.'s No. 1 Jameson, C SE Sec. 111, Blk. 1, H. & T. C. Sur. .... Rigging up.

Barber Oil Co.'s (was Mason Oil Co.'s) No. 1 W. A. Cross.. Drilling second hole 1,370 ft.

R. W. Raney's No. 2 Maberry.... Shut down for orders 2,725 ft.

Fred Phillips' No. 1 C. M. Webb, 756 ft. S and 1,050 ft. W NE cor. Sec. 2, Blk. K.... Hole full salt water 2,220-40 ft. and 2,637 ft.; shut down 2,715 ft.

Stearns & Streeter's No. 1 W. A. Howe, N and E SW cor. NE Sec. 12, Blk. 23, T. & P. Sur. .... Drilling 2,920 ft.

F. P. Zoch and others' No. 1 R. M. Clayton, C of W 160 acres of R. M. Clayton Pre-emption Sur. .... Odor gas 2,681-2,707 ft.; hole full salt water 2,712-55 ft.; sulphur water 3,090 ft.; show gas in black lime 3,128-32 ft.; black and gray lime 3,152-55 ft.; rainbow show and strong smell gas; drilling 3,685 ft.

FOARD COUNTY

Humble O. & R. and Navarro Oil Co.'s No. 1 L. McAdams, C S ½ Sec. 27, Blk. L, S. P. Sur. .... Shut down for gas 2,466 ft.

GARZA COUNTY

Emerald Oil Co.'s No. 1 D. Boren, NW cor. NE Sec. 137, Blk. 5, H. & G. N. Sur. .... Small show oil in gray lime 1,884-1,902 ft.

Pandem Oil Co.'s No. 1 Justice, SW cor. NW Sec. 2, Blk. 6, H. & G. N. Sur. .... Rig.

GLASSCOCK COUNTY

Green et al's No. 1 F. G. Oxsheer.... Rigging up.

J. S. Meriwether's No. 1 L. S. McDowell, C SW Sec. 43, Blk. 34, Twp. 2-S, T. & P. Sur. .... Location.

R. R. Penn et al's No. 1 W. P. Edwards, C SE Sec. 11, Blk. 34, Twp. 2-S, T. & P. Sur. .... Location.

HALL COUNTY

Seifert and others' No. 1 Owens, C NE Sec. 179, Blk. S-5, Dennison & Pacific Sur. .... Spudded and shut down.

HOCKLEY COUNTY

El Capitan Oil Co.'s No. 1 Ellwood, SW cor. Sec. 55, Blk. A, R. M. Thompson Sur., 18 miles NW of Lubbock.. Drilling 1,000 ft.

HOWARD COUNTY

Bowers et al's No. 1 Chester Jones, C SW Sec. 32, Blk. 27, T. & P. (3,200-ft. test).... Spudded and shut down.

Fred Carey et al's No. 1 G. O. Chalk, SE NW Sec. 124, Blk. 29 .... Shut down 250 ft.

Donoliee et al's No. 1 Martin, SE cor. Sec. 41, Blk. 33, T-2-N, T. & P. Sur. .... Drilling 1,200 ft.

Francis & Brunson's No. 1 J. W. Furrh, C SW Sec. 11, Blk. 31, T. & P. Sur., T-1-S.... Location.

Godley Oil Co.'s No. 1 A. J. Hooks.... Location.

Marland Oil Co.'s No. 1 J. B. Harding, C SE Sec. 19, Blk. 33, T. & P. Sur. .... Total depth 2,130 ft.; repairing engine.

L. C. Harrison et al's No. 1 Dora Roberts.... Spudded and shut down.

Marland Oil Co. & Zoch's No. 1 Guitar Est. No. 1.... Spudded and shut down.

Midwest Exploration Co.'s No. 1 H. R. Clay.... Rigged up and shut down.

HARDEMAN COUNTY

Murchison Oil Co.'s No. 1 Ayres.... Pulling pipe to abandon 3,000 ft.

HUDSPETH COUNTY

Lockhart Brothers' No. 1 Gardner & Moseley, C SE Sec. 5, School Blk. 21 .... Spudded and shut down.

IRION COUNTY

Cash Dollar et al's No. 1 Abe Mayer, C NE Sec. 1, Blk. 10, S. P. R. R. Sur. .... Total depth 2,500 ft.; pulled 8-in. to straightream.

Cash Dollar et al's No. 1 G. J. Bird, NE Sec. 16, Blk. 10, S. P. R. R. Sur. .... Shut down 1,085 ft.

JEFF DAVIS COUNTY

Humble O. & R. Co.'s No. 1 Crecencio Flores.... Moving in material.

J. K. Hughes Dev. Co.'s No. J. Z. Means, 600 ft. from N line and 2,000 ft. from W line of M. Robinson Sur. No. 1 .... Shut down 1,970 ft.

JONES COUNTY

Atlantic O. P. Co. and Landreth's No. 2 Howell.... Drilling 2,280 ft.

Bateman & Campbell's No. 1 Southard, C NW NW Sec. 43, Deaf & Dumb Asylum Lands.... Shut down; fishing tools 1,990 ft.

Campbell et al's No. 1 L. H. Herndon, Sec. 6, M. E. P. & P. Sur. .... Shut down 1,860 ft.

Consolidated Oil Co.'s No. 1 Armand & Taylor, C S½ SW Sec. 7, Blk. 4, H. & T. C. Sur. .... Hole full salt water 1,470-90 ft.; drilling 1,780 ft.

Garland & Diamond's No. 1 E. D. Glynn, SE cor. Sec. 18, Deaf & Dumb Asylum Lands.... Location.

Gault Brown et al's No. 1 Mrs. A. Zips, NE cor. NW Sec. 24, Blk. 14, T. & P. Sur. .... Drilling 750 ft.

Gibson & Johnson's No. 1 Largent, C SE Sec. 50, Blk. 149, Dewitt Co. School Land.... Shut down 2,560 ft.

Gillette & Hickey & Cowboy Evans' No. 1 S. W. King, Manuel Bueno Sur. No. 197.... Good show oil 2,070 ft.; no gas; swabbed 10 bbls. oil and 30 bbls. water; drilling 2,090 ft.

Gillette & Hickey's No. 1 M. E. Young, Tevanio Sur. No. 190 .... Shut down 1,200 ft.

Grisham & Hunter & Wildman's No. 1 Mrs. F. G. Phillips (was Birchfield), 1,371 varas from S line and 2,720 varas from W line, Harrison Co. School Land No. 333 .... Rainbow showing 2,758-65 ft. 2,815-25 ft. and 2,860-70 ft.; total depth 2,960 ft.; underreaming.

Grisham & Hunter & Wildman's No. 1 Williams, Harrison Co. School Land.... Two bailers oil brown sand 2,620-40 ft. through 50 ft. cavings; shut down 2,660 ft.; tested 1 bbl.

Hart & Cole's No. 1 Cranston, Sec. 10, Blk. 17, T. & P. Sur. .... Hole full salt water 2,650 ft.; shut down 3,055 ft.

Hurley Oil Co.'s No. 2 John Sears.... Hole full salt water 2,000 ft.; drilling 2,230 ft.

Hutson & Weaver's No. 1 Smith, Sec. 51, Blk. 18, T. & P. Sur. .... Shut down for fuel 700 ft.

Kirk & Brewer's No. 1 J. H. Milsap, Justo Rodriguez Sur., League 357 .... Drilling 1,100 ft.

Marland Oil Co.'s No. 1 Larson, C SE NE Sec. 138, B. B. D. & C. Sur. .... Preparing to abandon at 2,519 ft.

Marston Oil Co.'s No. 1 E. Howell, NW cor. SE W ½ of N 400 acres, Sec. 20, Blk. 19, T. & P. Sur. .... Total depth 2,315 ft.; underreaming 8-in.

Marston Oil Co.'s No. 1 J. S. Swan, Robert Spears Sur. No. 280 .... Drilling 820 ft.

Mid-Continent Petroleum Corp.'s No. 1 H. Evans, NE cor. SE SE Sec. 44, S. P. R. R. Sur. .... Shut down for water 2,360 ft.

Victor H. Martin's No. 1 Culbertson, Vincent Bell Sur. No. 6 .... Shut down for orders 3,240 ft.

Phillips Pet. Co.'s No. 1 Thornton.... Six bbls. water 1,930-45 ft.; missed pay; drilling by tools 2,826 ft.

Shaw & Rathke and others' No. 1 Bristow, SE SE Sec. 1, J. H. Gibson Sur. .... Shut down 500 ft.

W. G. Stough and others' No. 1 J. P. Willis, J. C. Patterson Sur. No. 2 .... Total depth 730 ft.; building rig to deepen.

Stebbins Oil Co.'s No. 1 J. M. Higgs, Sec. 30, W. T. Scott Sur. .... Show oil 1,600 ft.

Swensondale Oil Co.'s No. 1 Caton, SW NW Sec. 9, Deaf & Dumb Asylum Lands.... Drilling 800 ft.

Tomberlin et al's No. 1 Oscar Clapp, CSL, SW Sec. 37, Blk. 16, T. & P. Sur. .... Machine.

World Oil Co. and others' No. 1 A. W. Clark, SE cor. Sec. 15, Blk. 19, T. & P. Sur. .... Hole full salt water 1,975-2,010 ft., more salt water 2,305 ft.; slight show oil 2,425-36 ft. and 2,660-70 ft.; hole full sulphur water 2,930 ft.; total depth 2,933 ft.; underreaming 6-in.

World Oil Co.'s No. 1 Boyd (was W. H. Lee), 12,700 ft. N and 2,130 ft. E of SW cor., Samuel Jones Sur. No. 266 .... Total depth 2,023 ft.; mudding 8-in.

Zeigler and others' No. 1 Reeves, C SE SE Sec. 164, B. B. B. & C. Sur. .... Shut down 1,645 ft.

KENT COUNTY

Douglas Oil Co.'s No. 1 Scoggins.... Drilling 710 ft.

Marland Oil Co. and Texon O & L. Co.'s No. 1 Bilby... Location.

KING COUNTY

Gilson & Johnson .... Drilling 650 ft.

Midwest No. 1 Patton.... Spudded 100 ft.

J. L. Pattison No. 1 Patton.... Fishing 1,400 ft.

Phillips Petroleum No. 1 .... Drilling 1,525 ft.

Sinclair .... Spudded 100 ft.

White Eagle No. 1 .... Drilling 1,155 ft.

KNOX COUNTY

Deep Rock Oil Co.'s No. 1 Jones, CSL Sec. 111, Blk. C, H. & T. C. Sur. .... Drilling 2,350 ft.

Deep Rock Oil Co.'s No. 1 Beavers, CSL Sec. 224, Blk. 44, elev. 1,441 ft. .... Drilling 2,180 ft.

Deep Rock Oil Co.'s No. 1 Big Four, 1,270 ft. south and 2,590 ft. west of NE cor. Sec. 31, Blk. 4.... Cable tools; drilling 955 ft.

Humble O. & R. Co.'s No. 1 Goode, 1,940 ft. S and 200 ft. W of NE cor. Sec. 7, H. T. & B. Sur. .... Rigging up standard tools.

LOVING COUNTY

Kingwood Oil Co.'s No. 1 T. O. Moore, C NE Sec. 2, Blk. G-25, Pub. Sch. Ld. .... Rig.

Owens & Sloan's No. 1 W. D. Johnson, C SE Sec. 20, Blk. 53, T-2, T. & P. Sur. .... Spudding.

LUBBOCK COUNTY

Sam Arnett and others' No. 1 Bowles Ranch.... Shut down 400 ft.

LYNN COUNTY

The Hart Oil Corp.'s No. 1 C. O. Edwards, NW NW Sec. 5, Blk. 2.... Shut down 1,400 ft.

MENARD COUNTY

J. R. Lewis and others' No. 1 White, C NW Sec. 8, J. Mabrey Sur. .... Shut down 415 ft.

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SOUTHWEST TEXAS

(Continued from Page 53)

west corner. George M. Ball's No. 4 Puig, Survey 74, at 150 feet to southeast corner, has been abandoned at 3,812 feet. O. W. Killam's No. 1 Puig, Kirkpatrick tract, at 150 feet to northeast corner, is on a sand at 1,870-76 feet, total depth 1,880 feet. Edward St. Alabns' No. 2 Puig, Evans tract, at 450 feet to east line and 150 feet to south line, has a sand at 1,867 feet and set casing. Suladie Drilling Co.'s (Aztec Oil Co.) No. 1 Puig, north one-half of Block 49, at 200 feet to south line and 350 feet to east line, is drilling at 1,600 feet. H. E. Neal's No. 1 Bruni, Block 41, at 150 feet to northwest corner, is drilling at 1,700 feet. Murchison & Fain's No. 3 Bruni, west one-half of Block 45, located 1,650 feet to north line and 150 feet to east line, had a sand and set casing to make test, and tested dry.

Mirando Valley Pool

J. L. Johnson and others' No. 1 Anderson, Survey 2,363, Block 6, located 150 feet to southwest corner, is testing through Halliburton at 1,881 feet. Cornhuskers Oil Co.'s No. 6 Garcia, Survey 605, at 1,649-57 feet tested dry but showed a little gas.

Carolina-Texas Field

D. J. Simmons has spudded in No. 2 de la Garza, Survey 335, Block 8, located 150 feet to southwest corner. T. P. Morgan's No. 1 de la Garza, Survey 335, Block 23, located 150 feet to southeast corner, is drilling at 2,300 feet, having gone out of old hole at 2,150 feet. Barnsley-Chicago Syndicate's No. 1 de la Garza, Survey 335, Block 19, is drilling at 3,035 feet. Mims & Putman, trustees, No. 1 de la Garza, Survey 47, located 870 feet and 1,170 feet to west line, is drilling at 2,519 feet.

Mirando Valley-Zapata

O. W. Killam is making location in Survey 110 for No. 4 Hinnant. Magnolia Petroleum Co. has made location in Cerrito B'anco grant, at 5,110 feet to northeast lines and 150 feet to northwest lines, for No. 4 Cuellar. The Texas Company has spudded in No. 5 Jennings in Cerrito Blanco grant at 10,700 feet to southeast lines and 4,750 to southwest lines.

Charco Redondo Field

Harling Oil & Gas Co.'s No. 5 Martinez, near Corrigan ranch, is drilling at 650 feet. Paul D. Miller, trustee, is drilling his Nos. 1, 2 and 3 Carta Gena in the Charco Redondo shallow field.

Rockdale Field—Milam County

Coffield & Hale are rigging up for their No. 1 well on the Alford tract. Noack & Laning's test on the Poor Boy lease at 1,200 feet is dry. Coffield & Hale's No. 2 John Hicks, is drilling at 900 feet. Noack Oil Co.'s No. 4 J. B. R. Smith, Chamber Survey, at 150 feet to north line and 450 feet to east line at 1,400 feet, has been completed, making 14 bbls. Kent & Middleton are ready to spud in their No. 1 well, south of the city limits on the Henne, Meyer tract. Chicago Oil & Land Co.'s No. 3 Gambill, Thompson Survey, is drilling at 900 feet; No. 4 Gambill, Thompson Survey, 300 feet east of No. 2, at 1,335 feet has casing cemented ready to drill in. Fritz Fuches' No. 2 Lon Hudson, T. S. Arnett Survey, at 1,225 feet is a 25-bbl. producer; No. 3 Lon Hudson, T. S. Arnett Survey, 150 feet to northeast corner, is a location. Rockdale Development Co.'s No. 3 Lorenz, Thompson Survey, 300 feet south of No. 3, at 1,414 feet is pumping 4 bbls. Noack Oil Co.'s No. 3 Seelke, T. J. Chamber Survey, 300 feet southeast of No. 2, is rigging up. Rockdale Oil Co.'s No. 1 Lon Hudson, northwest corner, is a producer making 15 bbls. Ellison Oil Co.'s No. 5 Kevil, T. S. Arnett Survey, southeast corner, has been abandoned dry. Brady Brothers have completed the No. 10 Baldridge at 870 feet, making 25 bbls. Noack & Laning's No. 8 Baldridge, Chambers Survey, 300 feet east of No. 3, is a producer at 847 feet, making 20 bbls.; No. 9 Baldridge, in same survey, at 852 feet is making 20 bbls. R. T. Clifton's No. 1 Luetge has been completed, making 7 bbls. Kent-Middleton's No. 1 Bartlett, western edge of the field, has been completed, making 20 bbls. Noack & McCormick's No. 1 Marshall, western edge of the field, has been abandoned at 1,357 feet.

Luling Field—Caldwell County

North & South's No. 1 Kelly is drilling at 6,610 feet; No. 1 Tiller is drilling at 6,100 feet. Magnolia Petroleum Co.'s No. 18 Trammel, Reaville Survey, 200 feet to southeast corner, is drilling at 850 feet; No. 14 Proctor, J. Henry Survey, 300 feet southwest of No. 9, is drilling at 1,400 feet; No. 20 Maggie Moore, J. Henry Survey, 300 feet southwest of No. 12, is drilling at 2,061 feet; No. 27 W. H. Tabor, Reaville Survey, 300 feet northwest of No. 2, at 2,132 feet has been completed, making 110 bbls.; No. 6 Roberts, H. Cottle Survey, Guadalupe County, at 600 feet northeast of No. 5, is drilling at 2,035 feet.

Kingsville Field—Kleberg County

A. C. Erwin's No. 1 Kivlin (fee), Lot 7, Section 50, located 660 feet to southeast corner, is shut down at 710 feet. Humble Oil & Refining Co.'s No. B-1 Dennett, Lot 19, Section 38, 150 feet to southeast corner, is being rigged up to deepen. Carter-Walsh's No. 1 Flato, Lot 29, King land, has set casing at 550 feet. Humble Oil & Refining Co.'s No. 3 Kleberg trustee, Lot 1, Section 40, located 150 feet to northwest corner, is setting casing at 2,615 feet in hard sand carrying oil; No. 1 Kleberg trustee, Lot 8, Section 40, located 150 feet to northeast corner, is reaming to set 10-inch casing at 2,800 feet; No. 3 King, east of Cayo Del Grullo, is rigging up; No. A-3 Dennett, northwest corner, Lot 2, Section 39, is rigging up; No. 1 Kivlin, northwest corner, Lot 5, Section 39, is drilling at 830 feet.

Adams Gas Field—Medina County

Yantis and others' No. 1 Chandler, Survey 13, located 2,150 feet to north line and 2,742 feet to east line, has been abandoned at 1,206 feet and casing is being pulled. Western Gas & Fuel and C. E. Lange's No. 4 Adams at 1,004 feet has been completed, making 25,000,000 feet gas daily. Temeco Oil & Gas Co. (Henderson & Holden) No. 7 Adams has been completed at 946 feet, making 31,000,000 feet of gas daily.

Refugio Gas Field—Refugio County

Coast Gas Co.'s No. 5 Shelly, Block 144, at 330 feet to north line and 660 feet to east line, has been completed at 2,250 feet, making 40,000,000 feet of gas daily. Houston Gulf Gas Co.'s No. 3 Holmes Heard at 2,100 feet is ready to test; No. 3 Fox, Lot 4, Block 5, Town tracts, is setting casing at 2,110 feet; No. 3 Moody Refugio town tracts is drilling. William F. Morgan's No. 2 Rose Rogers, Powers Survey, northeast of No. 1, is a location; No. 1 Lambert has set surface casing.

EAST TEXAS FIELDS

(Continued from Page 46)

merged dome. After having drilled two tests the area became regarded as probably a large "nose" with a faulted condition. The company is drilling its third well in the area.

The Gulf, Humble and Texas companies own the acreage around the Brooks Dome in Smith County. Seven wells have been drilled on this dome all of which either got the salt or were not drilled deep enough to reach the Woodbine sand.

The Gulf Production Co. owns about 10,000 acres around the Steen Dome in Smith County and the Humble and the Texas companies own scattered pieces. The Magnolia Petroleum Co. has all its acreage on top of the dome.

Smaller Operation in the Play

The Gulf Production Co. owns a large block on the west side of the Grand Saline Dome in Van Zandt County. The Godley Oil & Gas Co., Gene Germany, Cranfill & Reynolds, Alexander & Liles, and J. H. Meeks have bought or are buying acreage on the east and southeast side which is looked upon with favor. It is believed that these independent operators will try to interest one or more of the larger companies in exploring this east and southeast acreage, failing in which they may promote the test wells themselves.

Scattered Leasing

Blocking is being done on the E. Porter, James Douthit and E. P. G. Chism Surveys southeast of Canton, Van Zandt County, by a Mr. Germany of Canton. The Pure Oil Co. is reported to have taken over a 16,000-acre block on 10-year leases (Form 88) in the southeastern part of Rusk County, east of Mount Enterprise. It is also reported the Humble Oil & Refining Co. has leased about 10,000 acres scattered over the county.

P. Chandler has blocked 5,000 acres in the extreme northeastern part of Henderson County mostly on the Simon Weiss Survey, near Chandler.

George Priestly of Shreveport has gathered up a block of leases a few miles south of Mineola, Wood County and Mineola parties are blocking east of the town and near Crow. The blocking there has been without recourse to geology.

In Smith County the Simms Oil Co. has located what its geologists believe is a salt dome on the George P. Verner farm in the Benjamin Kuykendall Survey 6 miles southeast of the town of Swan on the Neches River. The company has purchased 1,000 acres in the form of a half moon around the northeast and southeast of the dome.

It is very evident that a large part of the East Texas country, from the Mexia fault zone fields to the Louisiana State line will be given another exploration in the light of the Humble Oil & Refining Co.'s discovery on the Boggy Creek dome. Much depends upon the size of that structure and its showing of production when the discovery well is permitted to demonstrate what it is good for. It is not expected there will be any mad rush to work this big area, but that it will be done carefully and over a considerable period of time.

The Humble Oil & Refining Co., which made two locations for additional wells on the Earl & Ragsdale land, Boggy Creek Salt Dome, has derrick up for No. 2. The Magnolia Petroleum Co. was drilling in lime at 4,268 feet in No. 1 Summer, Brewer Survey, and about 5 miles southeast of Gallatin.

The Humble Oil & Refining Co. was drilling below 2,650 feet in No. 2-A Southern Pine Lumber Co. land, Morton Survey, Anderson County.

In Ellis County, Farish, Watts & Collins have derrick up for No. 1 M. Rochel, Gayton Survey.

In Falls County Callahan and others have abandoned their No. 1 Wilson, Scott Manchaca Survey, at 1,340 feet.

Trout and others are drilling in shale below 2,850 feet in No. 1 Gandy 100 acres, Truitt Survey, Franklin County.

J. S. Cosden and others' No. 1 Woods 150 acres, DeCosta Survey Freestone County had reached a depth of 4,318 feet, was drilling in sandy shale. Orbit Oil Co.'s No. 1 Coleman, Howard Survey, was drilling in lime at 2,910 feet.

The Amerada Petroleum Corp.'s No. 1 Jackson & Maloney, Ewing Survey, Hopkins County was abandoned at 3,325 feet. It was dry all the way.

The Transcontinental Oil Co.'s No. 1 Richardson, Jones Survey, was dry and abandoned at 3,176 feet. C. W. Green and others' No. 1 J. M. Dies, Garrison Survey, was drilling at 3,606 feet. Smith and others' No. 1 Stuberanch, Varella Survey, was drilling below 5,320 feet. Zoch and others' No. 1 Maddox, Varella Survey, was drilling below 3,605 feet. Alexander & Liles and others were drilling at 3,177 feet in No. 1 Sharp, Varella Survey. McCarty and others' No. 1 Brown, Jackson Survey, had reached a depth of 2,995 feet. They cored a sandy shale with a showing of oil. Alexander & Liles' No. 1 Strother, McKenzie Survey, were drilling below 3,176 feet. Dillen & Hammond's No. 1 Jones, Flippen Survey, were drilling at 3,076 feet.

In Navarro County, the Sun Oil Co.'s No. 3 Swink was at a depth of 5,410 feet. They have a fishing job to recover drill pipe.

Reiter and others' No. 1 Stubbs, Boren Survey, was drilling at 3,206 feet. Magnolia Petroleum Co.'s No. 1 Marshall, Chambers Survey, was drilling at 2,720 feet.

In Piney Woods Section

The success of the Humble Oil & Refining Co. at Boggy Creek has stimulated wildcatting activity in the east Texas counties, known as the "piney woods" section. It stretches from the mouth of the Sabine River, the boundary between Texas and Louisiana, north to the Red River. Twenty counties are embraced in the territory.

All this territory has been extensively wildcatted during the past 20 years and millions of dollars have been expended without developing any paying production. Vast tracts of land in these east Texas counties are owned by lumber companies, who operate numerous mills cutting up the timber into lumber. These lumber companies always encouraged the wildcatter because of the effect oil production would have on increasing the value of their cut-over timber lands.

The Houston Oil Co., now one of the active and prosperous operating companies in Texas with production in this state and Louisiana, is one of the products of these big east Texas timber companies. Its assets include thousands of acres of cut-over lands.

Some 10 years ago The Texas Company put on an extensive wildcat campaign on 1,000,000 acres of the Pickering Lumber Co. in Shelby County, drilling more than a dozen wells. Some production was found but not in commercial quantities. The old Guffey & Galey firm of Pittsburgh, Pa., forerunner of the present Gulf Production Co., the Sun Oil Co. and scores of individuals, drilled tests in Newton, Sabine, Jasper, Walker, Angelina, Nacogdoches and northward counties.

The first two fields in Texas are in east and northeast Texas. The old Nacogdoches shallow sands around 200 feet are in the county of that name. That field was opened back in the eighties. The Corsicana Field opened in 1896 is in Navarro County. Extensive wildcatting even for those early days followed the opening of those fields and it has continued intermittently ever since. The opening of the Mexia Field revived interest and another campaign followed with indifferent results.

New Crop of Wildcatters

Now, the Humble Oil & Refining Co.'s Carey Lake well has produced a new crop of wildcatters with different methods. The original searchers for new fields had very little to guide them, except what might be termed "oil instinct," gas bubbles and discolored water wells. These and such vague and indefinite information as could be secured from the natives were their only guides. Petroleum geology was unknown to those early pioneer wildcatters. They staked their rolls and lost, but the information they gained while drilling has been valuable to the searcher of today.

The major companies have crews out making geophysical tests, several of such crews operating in Anderson, Henderson, southeastern Cherokee, Smith and Rusk Counties. Tons of dynamite are being exploded and the torsion balance instruments are set up at regular intervals for observation. Secrecy is thrown around these geophysical operations and the reports are guarded by the geological departments of all the major corporations.

In Shelby County, the Magnolia Petroleum Co. has spudded in No. 1 Pickering Lumber Co. Clark & Meldt are drilling No. 1 Pickering and the Arkansas Fuel Oil Co.'s No. 1 Bouland is drilling below 3,200 feet. A test near Tenaha is around 4,000 feet.

In Nacogdoches County, Lewis & Stein's No. 1, located 17 miles east of Chreno, is below 900 feet. The Magnolia company has a test at Sacul.

The Porter Oil Co. is drilling near Crockett in Houston County and two locations have been made near Lovelady.

The Humble Oil & Refining Co.'s No. 1 at Jarvis, 10 miles east of Palestine, Anderson County, is drilling around 3,100 feet.

The known but undeveloped saline domes in central and northern Louisiana are to be tested out since the success of the Humble company in finding the Woodbine sand productive up against the Boggy Creek, or Carey Lake, Dome. Geophysical experts, scouts, leasers and speculators are gathering at Alexandria, from which point they will operate.

WEST TEXAS WILDCATS

(Continued from Page 83)

MITCHELL COUNTY

Clark and others' No. 1 Klothman, NW NW Sec. 77, Kulman Sur. — Shut down 580 ft.
Eastland Oil Co.'s No. 2 C. M. Adams — Cementing 6-in. 2,780 ft.; shut down.
California Co.'s No. 1 W. H. Butler, Lease 2 — Drilling 3,100 ft.
California Co.'s No. 1 E. Morrison, Lease 1 — Drilling 2,270 ft.
Teas & Stivers' No. 1 Dowlin, NW cor. Sec. 11, Blk. 27, T. & P. Sur. — Rig.
B. H. Cogdell's No. 1-C F. E. McKenzie, WL NW NE Sec. 226, Blk. 1-A, H. & T. C. Sur. — Shut down 125 ft.
Robert Thraves' No. 1 C. Way — Rig.
Paul Teas' No. 1 Ed Strain — Shut down 1,600 ft.
Morrison & Thompson's No. 1 Griffith, SE SE Sec. 45, Blk. 29, T. & P. Sur., T-1-N — Small show oil in sandy lime 2,715-20 ft.; drilling 2,760 ft.
B. E. Walter and others' No. 1 J. E. Dollen, NW cor. SW Sec. 11, Blk. 27, T. & P. Sur. — Shut down 3,955 ft.; hole full sulphur water.
J. C. Yancey's No. 1 Saunders, 400 ft. N and 1,700 ft. E of SW cor. Sec. 25, Blk. 25, T. & P. Sur. — Spudded and shut down.

MOTLEY COUNTY

Chechaco Oil Co.'s (J. W. Pennington et al of Amarillo) No. 1 J. W. Owens, NW cor. Sec. 26, Blk. 4 (15,000-acre solid block) — Shut down 1,050 ft.
Wheeler et al's No. 1 C. D. Bird, C NE Sec. 4, Blk. S, Stephens Sur. — Rig on ground.

NOLAN COUNTY

A. G. Malone et al's No. 1 J. B. Carlyle — Location.
A. G. Malone et al's No. 1 M. C. McElmurry — Spudded and shut down.
J. H. Winemiller Corp.'s (was Peters et al's) No. 1 Booth — Shut down 960 ft. for water.
Stein & Greeben's No. 1 L. W. Ross — Location.
Thomas & Reynold's No. 1 Allen, C. W. ½ NW Sec. 58, Blk. X, T. & P. Sur. — Total depth 1,252 ft.; underreaming 10-in.
Walford et al's No. 1 H. D. Simpson — Location.
Herbert Oil Co.'s (was McClesky and others') No. 1 Pepper, SE cor. SW Sec. 29, Blk. 22, T. & P. Sur. — Rigging up.
Phillips Pet. Co.'s No. 1 Scott, Sec. 58, Blk. 21, T. & P. Sur. — Drilling 1,140 ft.
Zweifel and others' No. 1 Longbotham, C SE Sec. 130, Blk. 1, H. & G. N. Sur. — Shut down 1,310 ft.

PARMER COUNTY

Humble O. & R. Co.'s No. 1 Farwell, elev. 4,005 ft. — Drilling 1,400 ft.

PECOS COUNTY

Arkansas Fuel Co.'s No. 1 H. Holmes, 2,040 ft. north and 1,520 ft. west SE cor. Sec. 16, Blk. 178, T. C. R. R. Sur., elev. 2,507 ft. — Drilling 670 ft.
Benedum & Trees' No. 1 J. C. Trees, C NW SE SE Sec. 30, Blk. 7, H. & G. N. Sur., elev. 2,556 ft. — Total depth 3,115 ft.; pulling 6-in. to straightream; flowing sulphur water.
Buell and others' No. 1 Batcheler, C N half NE Sec. 89, Blk. OW, G. C. & S. F. Sur., elev. 3,188 ft. — Show oil 1,700 ft.; flowed sulphur water 1,175 ft.; repairing engine 2,045 ft.
Buell & Hagan's No. 1 McKenzie, Sec. 8, Blk. 604, Mrs. A. L. Canon Sur., elev. 3,009 ft. — Drilling 700 ft.
Buell & Hagan's No. 1 University, C N ¼ SE Sec. 31, Blk. 24, elev. 2,816 ft. — Top lime 1,935 ft.; bailed 1½ bailers live oil 2,460 ft.; drilling 3,010 ft.
Buell & Hagan's No. 1 Jasper, 1 mile south and west NE cor. Jasper Co. School Land No. 104 — Location.
California Co.'s No. 1 Union Land Co., 1,650 ft. N and 990 ft. E of most northerly SW cor. Sec. 8, Blk. 110, T. C. R. R. Sur., elev. 2,615 ft. — Top salt 834 ft.; top dolomite 1,442 ft.; 2 bailers sulphur water per hour 1,550 ft.; drilling 1,590 ft.
Cromwell & Kimberlin's No. 1 Blackman, C NW Sec. 24, Blk. 3, H. & T. C. Sur., elev. 2,393 ft. — Top salt 890 ft.; shut down 1,400 ft.
Geo. A. Henshaw, Jr., No. 1 I. G. Yates, 330 ft. S and 1,650 ft. E of NW cor. Sec. 544, Blk. 1, I. & G. N. Sur. — Location.
Humble O. & R. Co. and Kirby Oil Co.'s No. 1 J. T. McElroy, NW SW SE Sec. 124, Blk. 10, H. & G. N. Sur. — Rig.
Del Rio Drilling Synd.'s No. 1 K. C. & Ft. Stockton, C SW Sec. 19, Blk. 178, T. C. Sur. — Shut down 740 ft.
Garland & Mott's No. 1 El Paso Cattle Loan Co., C NE Sec. 26, Blk. 126, T. & S. L. Sur. — Location.
Kershaw & Livingston's No. 1 Cannon, SW cor. NE Sec. 54, Blk. A-2, T. C. R. R. Sur. — Location.
Mid-Kansas O. & G. Co.'s No. 1 Smith Taylor — Drilling 100 ft.
Mid-Kansas O. & G. Co.'s No. 4 Yates A — Drilling 100 ft.
Mid-Kansas O. & G. Co.'s No. 1 Yates C (was No. 1 Acct. 3) — Repairing machine 41 ft.
Quinby Oil Co.'s No. 1 Townsite, Sec. 1, Blk. 267, Client Addition Sur. Ft. Stockton — Shut down 3,440 ft. (corrected).
Quinby Oil Co.'s No. 1 Bennett, C NW 592, Blk. 105, G. C. & S. F. Sur. — 200 ft. oil in hole from 1,216 ft.; shot 20 quarts 1,208-20 ft.; fishing tools 1,400 ft.
Quinby Oil Co.'s No. 1 A. A. Gray, 660 ft. north and 1,320 feet west SE cor. Sec. 593, Abst. 3,009 — Drilling 360 ft.
Texon O. & L. Co.'s No. 2 I. G. Yates — Drilling 260 ft.
Texon O. & L. Co.' No. 3 I. G. Yates — Location.
Texon O. & L. Co. and Marland Oil Co.'s No. 1 Blakesley — Spudding.
John Droppiemann's No. 1 Mrs. L. Hershenson, Sec. 7, Blk. 51, T. & P. Sur. T-10 — Drilling 370 ft.
World Oil Co.'s No. 1 Serf, SW cor. NE Sec. 10, Blk. 130, F. & St. L. — Moving in material.

REAGAN COUNTY

The Texas Co.'s No. 2 J. D. Sugg, C Sec. 87, Blk. 2, T. & P. Sur. — Top salt 860 ft.; top lime 2,110 ft.; hole full sulphur water 2,130-50 ft.; cased off; hard gray lime 2,715 ft.
Tidal Oil Co.'s No. 1 University, NW cor. NE Sec. 20, Blk. 8 — Drilling 260 ft.

REEVES COUNTY

Deep Rock Oil Co.'s No. 1 Caldwell, C SW Sec. 22, Blk. 58, T. & P. Sur., Twp. 8 — Drilling 3,000 ft.
Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Pub. Sch. Ld. — Spudded 20 ft. and shut down.
Humble Oil & Ref. Co.'s No. 1-B Kloh, C NE Sec. 47, Blk. 56, T. & P. Sur. T-2-S — Drilling by tools 1,610 ft.
World Oil Co.'s No. 1 Biggs, C SE Sec. 65, Blk. 112, Pub. Sch. Ld. Sur. — Drilling new hole 300 ft.

RUNNELS COUNTY

Associated Pet. Co.'s (was Bell & Moore's) No. 1 W. W. King, 1,200 ft. W of NE cor. Lge. 14, J. V. Cobrera Sur. — Spudded and shut down.
Moore & Bell's No. 1 Ferguson, 2,640 ft. S and 1,320 ft. E of NW cor. F. J. Ford Sur. No. 152 — Spudded and shut down.
Lou Ladd et al's (was Frank Yates') No. 1 R. M. McMillan — Small show oil and gas 545-62 ft. and 590 ft.; drilling 640 ft.

SCHLEICHER COUNTY

Beavers & Leath and others' No. 1 J. A. and W. T. Whitten, C NW Sec. 35, Blk. 11, T. O. Sur. — Spudded and shut down.
Thomas Grey et al's No. 1 Ball Robinson, C NW Sec. 25, Blk. M, G. H. & S. A. Sur. — Spudded and shut down; drilling water well.

SCURRY COUNTY

Northwest Co.'s No. 1 T. C. Stinson, NE NW SW Sec. 101, Blk. 97, H. & T. C. Sur. — Tested 8 bbls. 1,745 ft.; another pay at 3,402-07 ft.; bailed 70 bbls. oil in 4 hours and bailed bbls. oil in 4 hours and bailed dry; crooked hole 4,070 ft.; total depth 4,100 ft.; straightreaming.

STERLING COUNTY

J. P. Williams' No. 1 Clark, NE NE SW Sec. 7, Blk. 8, G. C. & S. F. Sur. — Drilling 900 ft.

STONEWALL COUNTY

McCamey & Zoch's No. 1 J. Ward, C SW Sec. 153, Mrs. Ward Dobbs Sur., 3 miles NW of Aspermont — Drilling 490 ft.

TAYLOR COUNTY

City of Abilene's No. 1 fee, NW SW SE Sec. 66, Lunatic Asylum — Shut down 2,264 ft.
Dorning & Perrine's No. 1 J. A. Hammer, center N 100 acres, Sec. 23, Blk. 19, T. & P. Sur. — Fishing for bit 250 ft.
Gibson & Johnson's No. 1 Hendry — Drilling 1,000 ft.
Grisham & Hunter's No. 1 D. D. Huddleston, CWL Lot 29, League 146, Grimes Co. School Land — Small show oil 2,332 ft.; total depth 2,585 ft.; underreaming 6-in.
W. E. Halbert et al's No. 1 Hunt, C SE Sec. 124, Blk. 64, H. & T. C. Sur. — Drilling 1,506 ft.
Humble O. & R. Co.'s No. 1 Mattie Jacobs — Drilling 785 ft.
Midwest Explin. Co.'s No. 1 Dora Smith, Jose Gabo. Sur. — Drilling 1,550 ft.
Midwest Explin. Co.'s No. 1 Toombes, Alex Thompson Sur. No. 37 — Underreaming 1,780 ft.
Mitchell & Breene's No. 1 Tittle — Location.
Morrison & Thompson's No. 1 Mrs. Alice Rose, SW cor. NE Sec. 29, Blk. 19, T. & P. Sur. — Drilling 1,600 ft.
Owen & Sloan's No. 1 Lattimer — Shut down 635 ft.
Roeser & Pendleton's No. 1 Sam Hutman, C W ½ NW Sec. 64, Blk. 5, T. & P. Sur. — Shut down for fuel 710 ft.
Sanger O. & R. Co.'s No. 1 Ike Brown NE cor. Sec. 54, Blind Asylum Land — Fishing tools 1,900 ft.
Sanger Oil & Refining Co.'s No. 1 Gillespie, Sec. 7, Lunatic Asylum Land — Drilling 4,050 ft.
World Oil Co.'s No. 1 J. R. Griffith — Spudded and shut down.

TERRELL COUNTY

E. T. Williams and others' No. 1 Robertson, C NE Sec. 71, Blk. D-10, T. C. Sur. — Drilling 2,950 ft.
Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M. K. T. Sur. (22 miles northeast of Sanderson) — Location.

TERRY COUNTY

Kingsland Oil & Potash Co.'s No. 1 Brownsfield, C NW SW SW Sec. 7, Blk. 1-A, E. L. & R. R. Sur. — Shut down 1,050 ft.

TOM GREEN COUNTY

Fitzgerald et al's No. 1 Bennett — Rig.
Marland Oil Co.'s No. 1 Llano, 3,500 ft. S and 13,000 ft. W of NE cor., Llano Co. School Land No. 964 — Drilling 820 ft.

UPTON COUNTY

Beaty et al's No. 1 J. F. Lane — Top salt 880 ft.; sulphur water 2,370 ft.; show oil 2,250-65 ft.; drilling 2,380 ft.
W. W. Donnelly and others' No. 1 University, C SW Sec. 21, Blk. 4, University — Top salt 1,560 ft.; drilling 2,700 ft.
Gulf Production Co.'s No. 1 J. T. McElroy-B, C SW NE Sec. 187, Blk. F — Top salt 1,220 ft.; total depth 2,821 ft.; cementing 6-in.
Hults and others' No. 1 Giddings, C Sub. Sec. 12, Throckmorton Co. School Land — Top salt 1,515 ft.; shut down 3,615 ft. for pipe.
Humble O. & R. Co.'s No. 4 Ricker — Show oil and gas 2,110 ft.; drilling 2,120 ft.
Marland Oil Co.'s No. 3 Burleson, T. C. Jones Sur. No. 100 — First pay 2,205 ft.; second pay 2,295 ft.; 2,000 ft. sulphur water 3,390-95 gt.; 1,000 ft. sulphur water 4,135 ft.; drilling lime 4,280 ft.
Marland Oil Co.'s No. 34 Burleson, Sec. 100, T. C. Jones Sur. — Shut down 3,255 ft.
Marland Oil Co.'s No. 3 Benton Land, Julia Prater Sur. No. 1 — Shut down 515 ft.
Prairie O. & G. Co.'s No. 1 Lane-C, NWC SW SW Sec. 3, G. C. & S. F. Sur. — Top salt 465 ft.; drilling 1,530 ft.
Sartain & Davis No. 1 Bull, SW NE Sec. 48, Blk. 41, T. & P. Sur. — Rig burned 3,290 ft.; rebuilt.
Snowden & McSweeney's No. 1 E. S. Hughes, NW cor. their 80 acres in Sec. 4, William Teer Sur. — Top salt 585 ft.; drilling 1,720 ft.
The Texas Company's No. 23 King — Top salt 512 ft.; drilling 2,169 ft.

VAL VERDE COUNTY

A. Blume and others' No. 1 Moore estate, Sec. 183, J. Mitchell Sur. — Shut down 3,000 ft.
Curso Williams' No. 1 Holman, NE NE Sec. 5, Blk. N, G. H. & S. A. Sur. — Fishing tools 2,600 ft.
Douglas Oil Co.'s No. 1 Sellars, C SE Sec. 32, Blk. A, I. & G. N. Sur. — Repairing engine 2,355 ft.
East Del Rio Oil Co.'s No. 1 Russell, E cor. Sec. 183, Del Rio Town Sur. — Shut down 3,142 ft.
Hiawatha Oil Co.'s No. 1 Sellars, C Sec. 1,031, Blk. A, I. & G. N. Sur. — Hole full salt water 2,455 ft.; fishing 8-in. 2,585 ft.
Independent O. & G. Co.'s No. 1 Whitehead, Sec. 81, Blk. D, G. C. & S. F. Sur. — Building rig.
Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I. & G. N. Sur. — Drilling 960 ft.
O. O. Owens' No. 1 Mills.
Transcontinental Oil Co.'s No. 1 W. S. Stevenson, NE SE NE Sec. 3, Blk. 4, I. & G. N. Sur. — Hole full sulphur water 4,400 ft.; fishing tools 4,412 ft.

WARD COUNTY

Marland Oil Co.'s No. 1 J. Sealey, C SE Sec. 78, Blk. A, G. M. M. & A. Sur. — Hole full fresh water 970-80 ft.; top salt 1,100 ft.; running 8-in. 2,650 ft.

WINKLER COUNTY

White Eagle O. & R. Co.'s (was Gibson & Johnson's) No. 1 R. A. Lock, 1,320 ft. west of NE cor. Sec. 30, Blk. 74, northwest of discovery well — Building rig.
Champlin Drilling Co.'s No. 1 C. W. Cowden, C SW Sec. 21, Blk. C-23, Pub. Sch. Ld., elev. 2,889 ft. — Total depth 900 ft.; trying to free 8-in. pipe.
McCullough Oil Co.'s No. 1 Tobe Morton, CEL Sec. 20, Blk. B-12, Pub. Sch. Ld. — Set 10-in. 1,420 ft.; drilling 1,570 ft.
R. S. Matthews and others' No. 1 State, C Sec. 7, Blk. A-57, Pub. Sch. Ld. Sur, elev. 3,120 ft. — Drilling second hole 200 ft.
Independent Oil & Gas Co.'s No. 1 Hendricks, Sec. 42, Blk. B-5, Pub. Sch. Ld. — Top of lime 2,720 ft. (?); drilling 2,740 ft.
L. D. Ladd, Hill and others' No. 1 Amburgey, C NW Sec. 24, Blk. B-7, Pub. Sch. Ld. Sur., elev. 3,033 ft. — Top salt 1,220 ft.; top lime 3,365 ft.; total depth 3,447 ft.; rig burned.
Pure Oil Co.'s No. 1 Hendricks, SW cor. Sec. 41, Blk. B-5, Pub. Sch. Ld. — Spudding.
Skelly Oil Co.'s No. 1 M. M. Leeman, 1,320 ft. east of SW cor. Sec. 21, Blk. 75, elev. 2,951 — Top salt 1,167 ft.; drilling 2,400 ft. in salt.
Southern Crude Oil Purchasing Co.'s No. 1-C (was No. 2) Hendricks, NE cor. Sec. 33, Blk. B-5, Public School — Top salt 1,910 ft.; top pay 2,915 ft.; 1,500 ft. oil in hole; tools stuck 8 ft. off bottom; fishing.
Southern Crude Oil Purchasing Co.'s No. 2-C (was No. 3) Hendricks, Sec. 33, Blk. B-5 — Top salt 1,901 ft.; standardizing 2,553 ft.
Llano Oil Co.'s No. 1 Scarborough, center Sec. 1, Blk. C-22, Pub. Sch. Ld., elev. 2,921 ft. — Top salt 1,115 ft.; hole full water. 1,321 ft.; 10-in. set 1,570 ft.; bottom salt 2,245 ft.; shut down 2,305 ft.
Group 1 Humble O. & R. Co.'s No. 1 T. G. Hendricks, C SE Sec. 36, Blk. 27 — Spudding 120 ft.
Humble O. & R. Co.'s No. 1 T. G. Hendricks, S and W NE cor. W ½ NE Sec. 33, Blk. B-5, Public School Land — Rig.
Southern Crude Oil Pur. Co.'s No. 3-C Hendricks, SE cor. NE Sec. 33, Blk. B-5 — Drilling 1,700 ft.
Southern Crude Oil Pur. Co.'s No. 1 T-67 Hendrick-A, SE cor. Sec. 42, Blk. B-5 (discovery well) — Top pay 2,997 ft.; total depth 3,049 ft.; will set string of 5-in. and make deep test.

KANSAS FIELDS

(Continued from Page 44)

12-27-7, started off at 175 bbls. a day after it was shot with 50 quarts in sand at 2,721-41 feet.

Chase County

Kewanee Oil & Gas Co.'s No. 1 Lipps, C NE NW, Section 36-18-6, is drilling at 650 feet.

Cowley County

Neely Oil & Gas Co. is building the rig to deepen No. 1 Bell, NW cor. NE, Section 5-33-5. Forrester and others' No. 1 Countryman, NE cor NW, Section 4 33-7, is an old well drilling deeper at 2,792 feet.

Reynolds and others' location for No. 1 Garrison, SE cor. SW, Section 28-30-8, has been abandoned. State Gas Co.'s No. 2 State Land, SE cor. SW SW SE, Section 15-32-4, in the State Pool is making 3,500,000 feet of gas from sand at 2,605-14 feet. Marland Oil Co.'s No. 4 Graham, NW cor. SE SW NE, Section 15-32-4, was completed for 50 bbls. from sand at 3,268-75 feet. McMahon and others' No. 1 Graham, SW cor. NW NE, Section 15-32-4, came in for 100 bbls. from sand at 3,279-96 feet. McNabb and others' No. 1 State Land, SE cor. NE NW, Section 15-32-4, is a 400-bbl. producer in sand at 3,264-68 feet.

Elk County

Superior Oil Co.'s No. 1 Welch, SW cor. NE, Section 29-31-11, is a 10-bbl. well in sand at 2,266-67½ feet.

Greenwood County

Schwartz and others made location for No. 1 Kipfer, NW cor. Section 12-22-11. Murphy and others made location for No. 1 Edwards, NE cor. SW, Section 7-26-10.

Empire Gas & Fuel Co.'s No. 12 Duby, SW cor. NW NW, Section 23-22-11, had sand at 1,870-1,905 feet, was shot with 90 quarts and made 180 bbls. Abel & Rhodes' No. 1 Barnard, SW cor. SE NW, Section 4-23-10, is dry and abandoned at 2,477 feet. The Texas Company and Simmon's No. 4 Edwards "B," SW cor. NW SW, Section 16-23-11, made an 80-bbl. well after a shot of 120 quarts in sand at 1,928-79 feet. No. 3 Edwards "E," SW cor. Section 16-23-11, was shot with 200 quarts and having only a small show, was abandoned. No. 4 Edwards "E," NW cor. SW SW, Section 16-23-11, was shot with 180 quarts in sand at 1,921-80 feet and made 100 bbls. Abel, Finney and others' location for No. 1 Hamilton, SW cor. NE, Section 32-24-12, has been abandoned.

Harwood, Winters and others' No. 1 Ladd, NE cor. NW NW, Section 35-25-8, is making 50 bbls. from sand at 2,444-64 feet. The well was shot with 80 quarts. Winona Oil & Gas Co.'s No. 1 Benest, SW cor. Section 33-27-11, has been abandoned at 1,987 feet.

Lyon County

Theta Oil Co.'s No. 9 Jones, SW cor. NE NW, Section 30-21-10, was shot with 60 quarts and is producing 10 bbls. from sand 2,250-92 feet.

Marion County

T. B. Slick and others made location for No. 1 Rogers, NW cor. SE SE, Section 20-17-1e.

Schook and others' No. 1 Novak, C NE SE, Section 8-18-4, is a dry hole at 2,550 feet.

Rice County

Sand Creek Oil Co.'s No. 2 Jacobson, NE cor. SW NW, Section 2-21-6, is a dry hole at 3,450 feet.

Russell County

Kettle & Shoemaker's No. 1 Kistler, SW cor. NE NW NW, Section 6-14-12, is dry and abandoned at 3,400 feet.

Sumner County

Roxana Petroleum Co.'s No. 4 Mason, SW cor. SE NW, Section 25-31-2e, had the top of the sand at 1,837 feet, drilled to 1,900 feet and after a shot of 80 quarts made 400 bbls.

SOUTHWEST WILDCATS

(Continued from Page 53)

cat near Dale, in eastern Caldwell County, and is rigging up on another in western Caldwell, southwest from Lockhart. Caldwell County, with the help of some independent operators, has more wildcat wells drilling than any county except Medina. Lou Gould Sheddan is starting a well northeast of the town of Luling and Fred Adams is setting casing to test a showing of oil in Austin chalk at 2,030 feet and located about 1,000 feet southwest from the North & South's 1-bbl. well in the same formation at approximately the same depth.

Duval County

Schlessinger Oil Corp. has made location for No. 2 Hahl in Survey 60. George B. Pickett is making location in NW cor. of Ball ranch for No. 1 Ball. Ralston M. Talbott's No. 1 Margarite, Survey 4, located 200 feet to east line and 600 feet to south line of No. 1 Martex, is standing at 1,607 feet. Humble Oil & Refining Co.'s No. 12 Singer, Survey 4, located 2,600 feet to north line and 2,000 feet to west line, is drilling at 1,542 feet. Humble-Reiter-Foster's No. 4 Kohler, Survey 400, located 660 feet to SW cor., at 2,420-32 feet, tested small amount of gas and is drilling deeper; No. 5 Kohler, Survey 395, located 1,080 feet to east line and 530 feet to south line, is drilling at 700 feet. Humble Oil & Refining Co.'s No. 2 Welder-Wood, Survey 102, located 5,280 feet to south line and 4,500 feet to east line, is rigging up.

Jim Hogg County

Holden and others' No. 3 Jones, Share 27, Block 136, located 330 feet to east line and 440 feet to north line is drilling at 1,360 feet. Harry Hamilton and others' No. 1 Holbien, Block 44, Hamilton Subdivision, 158 feet to south line and 363 feet to west line, Agua Arriba Nueva, is drilling at 1,600 feet.

Starr County

Milham Corp.'s No. 1 Guerra, Porcion 107, located 14,520 feet to south line and 1,320 feet to east line, is drilling at 2,925 feet; No. 2 Salinas, Porcion 111, SE cor., is drilling at 2,925 feet. Sterling & Suladie's No. 1 Yzaguirre, Block 8, Sterling & Suladie Subdivision, at 1,320 feet to SW cor., is standing at 3,011 feet and is preparing to drill deeper.

Webb County

Cin-Tex Petroleum Co.'s No. 1 Peal, Survey 72, Block 5, located 150 feet to SE cor., is drilling at 950 feet. Rio Grande Oil Co.'s No. 1 Urbahn, Santo Tomas tract, 10,000 feet to south line and 20,000 feet to east line, is moving in to deepen at 1,600 feet. O. W. Killam's No. 1 Billings, SE NW, Survey 43, located 150 feet to south line and 750 feet to west line, is drilling at 2,200 feet.

Zapata County

Earl K. Bateman's No. 12 Sorapio Vela, Share 2, El Crullo grant, is a location. Mission Oil Co.'s No. 1 Slator, Borrego Survey, Block 16, located 1,347 feet to northwest lines and 784 feet to northeast lines, is drilling at 1,600 feet. Fred Thomey and Edouard Raymond are preparing to start drilling in the Uribe grant by April 15. Buffalo Erie Syndicate's No. 3 Martinez, Block 2, R. V. Hill Subdivision, at 670 feet to northeast lines and 250 feet to southeast lines, is skidding derrick.

Atascosa County

Grayburg Oil Co.'s No. 27 G. W. Carruthers, J. W. Cooper Survey, 845 feet to east line and 825 feet to north line of lease, is preparing to spud in; No. 21-B Hartung, Survey 1,172, at 1,465 feet to west line and 740 feet to south line, has spudded in.

Bexar County

Associated Petroleum Co. has made location for No. 1 Ernest in Survey 266, at 360 feet to north line and 150 feet to east line; location has also been made for No. 13 Caruthers, William Caruthers Survey, 503 feet east of No. 12. Marland Oil Co.'s No. 1 San Antonio, trustee, Block 1, J. Pickins Survey, 2,280 feet to east line and 1,528 feet to south line, has been abandoned at 1,267 feet. A. R. Beal, trustee's No. 1-A Ackerman, Survey 133½, at intersection of White and St. Hedwig Roads, is drilling at 190 feet.

Bastrop County

The Texas Company's No. 1 Goertz, Survey 349, J. Lentz, 200 feet to west line and 150 feet to south line, has been spudded in. Neal A. Nelson's No. 1 Arthur Naumann, 5 miles south of Smithville, is shut down at 1,030 feet.

Bee County

W. S. Poole is making location for test in Bee County. Nichols & White's No. 1 Hicks, Hicks-Ball Survey, Block 19, NW cor., is shut down at 821 feet.

Caldwell County

Joe Bruner has derrick up for No. 1 W. F. Davis in the salt flats near a well drilled 20 years ago. Sun Oil Co. has spudded in No. 1 Talley, Swearingen Survey, 650 feet to northeast line and 1,675 feet to southeast line. Fred Adams' No. 1 Walter Ellison, near Seawillow, topped chalk at 2,016 feet and is drilling at 2,045 feet. Sutton & Smith's No. 2 Robert Carter, G. Hinde Survey, at 2,368 feet, bailed with good deal of gas showing, and will deepen to the Edwards lime.

DeWitt County

McNeil & Matthews' No. 1 A. D. Kaiser, A. Dillard Survey, 1,508 feet to NW cor., is drilling at 1,000 feet with gas showings at 640 feet. Yoro Development Co. has derrick up for No. 2 well across the railroad about 1 mile from No. 1 Tom Burns. Empire Southern Oil Co.'s No. 1 C. G. Smith, 8 miles southwest of Cuero, at 2,441-56 feet, tested salt water and is shut down.

Dimmitt County

Humble Oil & Refining Co.'s No. 1 City National Bank, Survey 654, at 700 feet to north line and 2,000 feet to east line, is drilling at 1,620 feet.

Frio County

P. A. Neilan's No. 1 Blackaller, James Gouley Survey, has 8-inch down full way over drill stem and is ready to start fishing.

Fayette County

LaFayette Oil Co.'s No. 1 August Marquardt, J. R. Phillips Survey, 976 feet to northwest lines and 400 feet to southwest lines, is drilling at 460 feet.

Gonzales County

F. G. Sterns has made location for No. 1 Ramsinsky and also for No. 1 Thomas. Bristol Oil & Gas Co.'s No. 2 Denman, A. Zumwalt Survey, is shut down at 807 feet. E. Lee Moore's No. 1 Elder is drilling at 2,240 feet. Joe Bruner's No. 1 Vaughn, Kent Survey, 200 feet to west line and 300 feet to south line, is reaming at 1,040 feet to set 6⅝-inch casing and test. C. A. Campen's No. 1 Lamkins, 2½ miles from Waelder, has been abandoned at 2,275 feet and a second hole may be started.

Guadalupe County

Pat Armstrong's No. 1 Dale topped the chalk at 1,652 feet and shut down. P. A. Lain's No. 1 F. C. Weinert, W. K. Estell Survey, 150 feet to north line, has set 10-inch casing at 400 feet.

Hayes County

J. E. Rodgers' No. 1 Hohenburg, 2½ miles east of San Marcos, is moving in rig from Somerset Field in Bexar County.

Karnes County

Earl B. Reynolds' No. 2 Butler, Block 43, at 1,000 feet south of No. 1, is being put on the pump, total depth 1,947 feet. Alamo Drilling & Leasing Co.'s No. 1 Szalwinski, L. Manchaca Survey, 500 feet to northeast lines and 200 feet to southeast lines, is drilling.

Kerr County

Walker-Van Duyn's No. 1 W. B. Leigh, Survey 38, at 500 feet north of river and 150 feet south of railroad at Center Point, is fishing at 2,250 feet.

Kinney County

W. A. Stephens and others' No. 1 Jim Clamp, Survey 346, at 5,362 feet to west line and 5,674 feet to south line of survey, has set surface casing at 142 feet. Havelin Oil Co.'s test, 18 miles from Del Rio, in Section 21, Block 5, is fishing for bailer at 4,305 feet in black shale.

Lee County

Plunkett & Edwards' No. 1 Adolph Wachemann, Thomas Kinney League, three-fourths of a mile west of Monheim, is in shale at 2,130 feet with traces of oil and enough gas to raise the fluid 2 feet, M. O. Ricketts' No. 1 Sanders, Joseph Maxmillian League, 250 feet to SE cor., is standing at 300 feet.

Live Oak County

Stoval & Kelly's No. 1 Stewart, William J. Cannon Survey, 200 feet west of Nueces River and south of Lagarto Creek is preparing to start drilling. Warren Wood Hunt has made location for No 1 B. McNeil Jane Curry Survey 4,000 feet west of northeast corner, is location and is rigging up. J. W. Walton's No. 1 Roberts, west of Three Rivers, at 1,740 feet has tested four sands all of which showed a little gas.

Medina County

Witherspoon Oil Co.'s No. 2 Redus, Survey 92, has set casing at 910 feet; No. 1 Nixon, Survey 119, at 1,500 feet to east line and 1,600 feet to south line, is drilling at 860 feet. R. P. O'Brien's No. 1 J. P. Nixm Survey 531, SE cor., is changing to rock bit at 341 feet. Fennell & Williams' No. 1 John Fohn Survey 115, east 100 acres is at 970 feet steel line measure to top of oil show, and is ratholing. J. H. Gray and others' No. 1 Louis Mann, Survey 16, at 350 feet to north line of farm and 350 feet west of river, at 1,158 feet is to drill out plugs and set liner and bail. J. A. Swayze's No. 1 Oeffingers, Survey 129, center of Block 22, is drilling at 300 feet. Ina Oil Co.'s No. 2 Finger, Survey 746, Lot 5, at 300 feet south of No. 1, is drilling at 1,270 feet. Cecil Switzer's No. 1 Zerr, Survey 459, at 2,760 feet is to set casing to shut off cave and water. J. S. Whelless-E. T. Peters' No. 1 Anton Berger, Survey 341, at 1,290 feet topped Edwards and at 1,315 feet in the Edwards is showing sulphur water.

Maverick County

Ryan Consolidated Petroleum Co.'s No. 1 Indio, Survey 14, center of survey, is drilling at 800 feet. Rycade Oil Corp.'s No. 1 Chittim is drilling with cable tools at 6,000 feet; No. 2 Sullivan is drilling at 3,800 feet and showing gas.

McMullen County

George Pickett's No. 1 Jacobs, Survey 7, at 660 feet to center of north line, is coring at 1,035 feet. Dodson and others' No. 1 Franklin, SW, Survey 31, is shut down at 1,100 feet. Houston Gulf Gas Co.'s No. 5 Jacobs, J. Rees Survey, 150 feet east of No. 1, is standing at 904 feet. George M. Ball's No. 1 Kuykendall, Block 7, G. C. & S. F. Ry Survey, 300 feet to south line and 600 feet to east line, is standing at 1,390 feet.

Nueces County

Pearson's No. 1 John Dunn, south side of Nueces Bay, is on gas sand at 2,363 feet; derrick is up for No. 1 Weil, west of Corpus Christi, and near the Saxet wells supplying gas to the city.

San Patricio County

F. S. Smiley's No. 1 T. E. Wilson, one-quarter mile northwest of Angelita, has derrick up. W. L. Pearson and others' No. 4 Cage, Rachall Survey, 1,200 feet north of No. 2, has set casing at 2,140 feet to test; Huber & Crawford's No. 1 Mathis, Delgavo Survey, Block 17, 300 feet to northwest lines and 2,500 feet to southwest lines, is shut down at 2,200 feet for repairs. John Sigmund's No. 7 McCampbell has been spudded in.

Terrell County

Big Bend Oil Co. has made location for No. 1 Bassett, C NW, Section 155, 22 miles northwest of Sanderson. E. T. Williams and others' No. 1 Sowden, Survey 71, Block D-10, 13 miles southeast of Sanderson, is setting casing at 2,785 feet.

Wilson County

Thomas and others' No. 1 August Heese, Survey 124, NE cor., is rebuilding derrick. Gibson Oil Corp.'s No. 1 Espey, Arocha grant, is to be probably abandoned at 1,380 feet at which depth it has been shut down for nearly a year.

KILLED IN SOUTH AMERICA

CHATHAM, Ontario, Apr. 9.—Stanley Crompton, aged 20, of Sarnia, Ontario, was killed April 2 in an automobile accident in Barrancas, Colombia. He went to South America in January under contract with the International Petroleum Co. He was a member of the office staff of the company at Cartagena, Colombia, and later transferred to Barrancas.

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Spindletop 65

Liberty 65

Mehan 50 California 25

Goose Creek 28 Petrolia 7

Smackover 25 Corsicana 7

Wewoka 17 Hull 17 Russia 15

Davenport 14

Morris 6 Sour Lake 6

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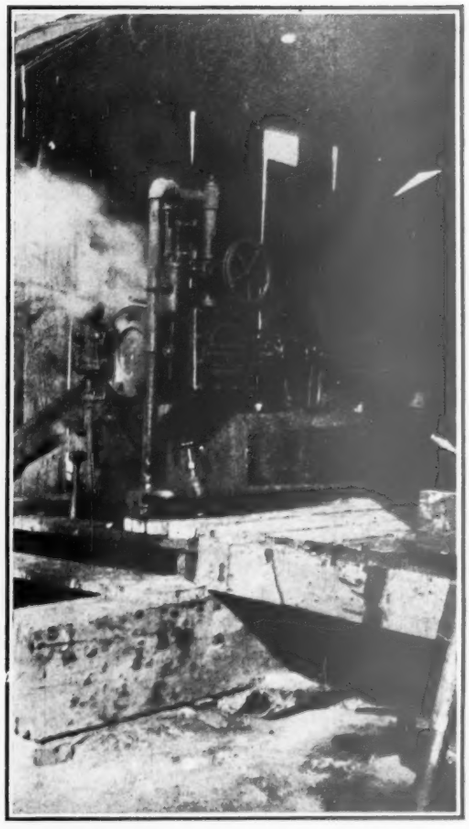
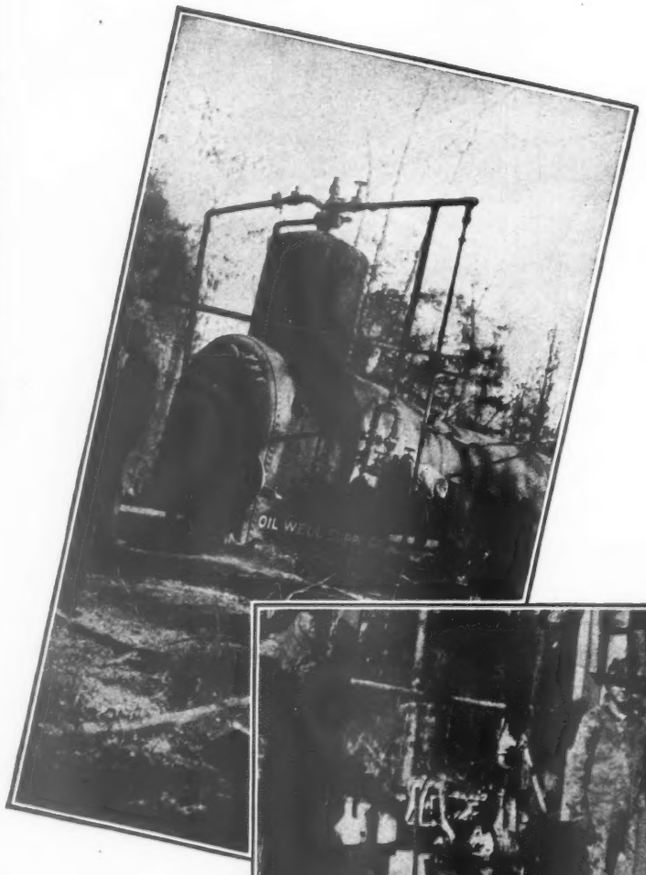


THIS 10½" x 12" "OILWELL" Steam Engine is the property of McQuiegg Brothers and was manufactured and sold early in 1910. It has been in service more than 16 years. It was used for drilling in the California fields about 10 years; it was then used for 5 years as a pumping engine, after which it was moved to Artesia, New Mexico, where it is now drilling its second well.

The only money spent for repairs during the entire 16 years was for re-babbitting after the engine had been through a severe fire.



HERE are two views of an "OILWELL" Outfit which was purchased in Haynesville, La., in March, 1922. It has just completed its twenty-eighth (28th) well, and the C. E. Ferguson Drilling Company inform us that the only expense they have had was one pinion and pinion shaft for the rotary. The "OILWELL" 66 H. P. Boiler has not cost one cent for repairs, and the original tubes are still in the boiler.

"OILWELL" ESTD. 1862. TRADE MARK. REGISTERED

OIL WELL S

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIEQU

mt May Not Always Break Records--

An "OILWELL" Drilling Engine in use for 16 years; no repairs except re-babbitting after a fire.

An "OILWELL" Boiler in use for 4 years; no repairs, and the original tubes are still in the boiler.

An "OILWELL" Imperial Rotary has just completed its 28th well, the only expense being one pinion and pinion shaft.

HERE are a few proofs of the quality, durability, and reliability of "OILWELL" Equipment---or in one word, *service*. Of course all "OILWELL" Equipment may not make or break records, but every piece of equipment is intentionally designed and manufactured to give the best possible value. When you buy from "OILWELL" you are sure of getting *service* unparalleled by any other equipment.

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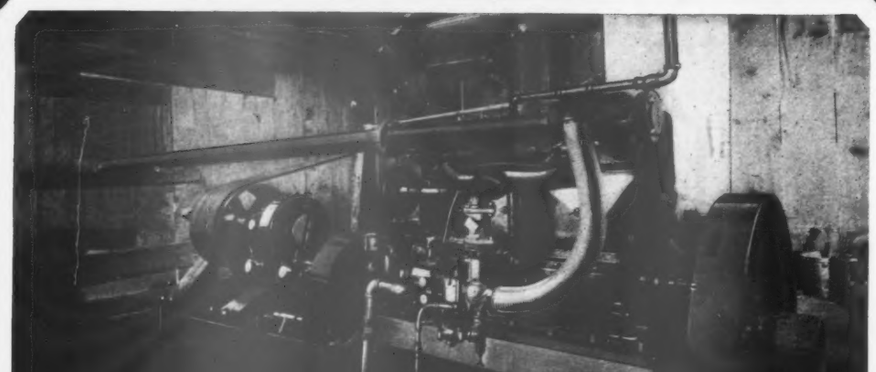

Showing the Buffalo Drilling Unit with the wheels dismounted, installed for service.

Concerning the Buffalo Drilling Unit H. E. Bishop of Bradford, Pa. Says

So. Bradford, Pa.,
March 9, 1927.

Buffalo Gasolene Motor Co.,
Buffalo, N. Y.

Gentlemen:

At the present time I have two of your Buffalo drilling engines in use, and consider them the best thing on the market for the purpose.

They cost very little to operate as to fuel, water and oil.

I would be pleased to recommend them to anyone who is in the market for drilling engines.

Yours very truly,
(Signed) H. E. BISHOP.

The Buffalo Drilling Unit is a strong, dependable outfit designed to meet the actual conditions of the oil fields.

It has lots of power—a four-cylinder, heavy duty motor, with 6¾ in. bore and 9 in. stroke, a wide range of speed to meet all needs.

The belt is not run off the clutch. This eliminates clutch strain and shifting of alignment.

The Buffalo Drilling Unit is easily portable—mounted on steel wheels. It can be rigged up in one hour. It does not require any special setting form. It can be set on old rig timbers.

about 4000 cu. ft. per day. The water consumption is about one-half barrel per day.

Hundreds of Buffalo Drilling Units are in use in the Pennsylvania, Kansas and Texas fields. Any user will tell you that they cut down drilling costs and give steady, dependable service day after day.

It is equal to steam in dropping tools and handling casing.

It operates on natural gas or gasolene. When operating on natural gas the fuel consumption is

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Parkersburg Rig & Reel Co.
Parkersburg, W. Va.

OKLAHOMA FIELDS

(Continued from Page 44)

1-A Berryhill, NE cor. SW, Section 35-11-9 is drilling at 1,110 feet.

The Pure Oil Co.'s No. 1 L. Fixico, NW cor. SE, Section 14-11-10 is producing 30 bbls. from the Gilcrease sand 3,233-34 feet. Darby & Atlantic Oil Producing Co.'s No. 1 Manwarring, SE cor. NW SW, Section 16-13-10 is dry in the Wilcox sand 3,520-32 feet.

Oklahoma County

Cromwell & Wirt Franklin's No. 1 Walgren, C SE, Section 21-14-3w is spudding. No. 1 Stone, C SW, Section 28-12-4w is drilling at 1,600 feet.

Muskogee County

W. R. Sommerville has the rig up for No. 2 T. Lewis, SE cor. NE NW NE, Section 17-15-17. C. M. Bradley has the machine at the location for No. 4 Goodrich, NW cor SW NW SW, Section 5-14-19.

H. W. Kiskaddon's No. 1 R. Drew, SE cor. NE SW, Section 33-15-16 had a hole full of water in sand 2,420-30 feet and has been abandoned. Sunray Oil Corp.'s No. 1 Roberts, NW cor. SW NW, Section 16-15-17 a location, has been abandoned. C. M. Bradley's No. 1 Thompson, SW cor. SE, Section 2-14-19 has been abandoned at 135 feet. No. 1 Wade, SW cor. NE, Section 2-14-19 has been abandoned at 315 feet. Howard & Murphy's No. 1 Smith, NW cor, NE SE SE, Section 18-13-19 is producing 1,500,000 feet of gas from sand 1,379-83 feet.

Osage County

Skelly Oil Co. is building the rig for No. 1 SE cor. SW, Section 27-27-6 in the Burbank Pool. Rigs are also being built for the following wells: No. 2 SW cor. SE SW; No. 3 SE cor. SW SW; No. 4 SW cor.; No. 5 NW cor. SW SW; No. 6 SW cor. NW SW; No. 7 NW cor. SW; all in Section 27-27-6. Phillips Petroleum Co. is putting up the rig for No. 8 NE cor. SE SW, Section 20-26-6. Indian Territory Illuminating Oil Co. made location for No. 364 SW cor. NE SE, Section 20-23-10. Mid-Kansas Oil Co.'s No. 1 NE cor. SE, Section 18-14-6 is drilling at 650 feet. A. J. Wright & J. A. Davis' No. 1 SW cor., Section 5-21-9 is spudding. Graham & McElroy's No. 1 SE cor. NE SE, Section 5-20-10 is drilling at 100 feet.

Phillips Petroleum Co.'s No. 8 NE cor. SE SE, Section 7-27-6 had the Burbank sand 2,952-3,011 feet, drilled to 3,013 feet and made 330 bbls. natural the first 24 hours. Osage Gas Producers' No. 377 NW cor. SW, Section 5-27-11 is a 3,000,000-foot gas well in the Mississippi lime 1,824-45 feet. Tidal Oil Co.'s No. 7 C W half NE, Section 7-21-11, has been abandoned at 2,093 feet. No. 22 NW cor. SE SW, Section 34-22-10 is making 15 bbls. after a shot of 120 quarts in the Bartlesville sand 1,898-1,952 feet. No. 23 NW cor SE SW, Section 34-22-10 had the Cleveland sand 1,200-50 feet and after shooting 20 quarts made 20 bbls. Superior Oil Co.'s No. 1 C NW Section 8-22-11 was shot with 120 quarts and is making 50 bbls. from the Bartlesville sand 1,660-85 feet. Devonian Oil Co.'s No. 1 SW cor. SE NE, Section 33-22-11 had a hole full of water in the Bartlesville sand and is abandoned at 2,136 feet. T. K. Smith's No. 2 SE cor. NE, Section 5-22-12 is producing 8,000,000 feet of gas from the Burgess sand 1,833-57 feet. Lillystrand and others' No. 4 NW cor. SE SE, Section 14-12-10 made a 5-bbl. well after a shot of 80 quarts in the Bartlesville sand 1,936-68 feet. Sand Springs Home's No. 102 SE cor. SW NW, Section 36-20-10 is dry and abandoned at 2,225 feet. The Prairie Oil & Gas Co. is building the rig for No. 1 SE cor. SW, Section 30-25-8. Location has been made for No. 2 NE cor. SW, Section 30-25-8.

Okmulgee County

Simms Oil Co.'s No. 1-A Key, SE cor. NE NE, Section 14-12-12 is fishing at 960 feet. L. C. Wheeler's No. 2 Jackson, C SE SE, Section 33-15-12 was completed for 25 bbls. after a shot of 40 quarts in the Dutcher sand 2,134-48 feet. Carr Peterson's No. 1 Ware, SW cor. NE SW, Section 9-15-14 is spudding. Misner & Moore's No. 10 Francis, C SW NW, Section 11-15-14 is drilling at 1,500 feet. J. L. Powell is rigging up machine for No. 3 Thomas, CNL SW SE, Section 23-14-14. Hazlett and others' No. 2 Fields, NW cor. NE, Section 33-13-13, is a machine.

W. B. Pine & The Prairie Oil & Gas Co.'s No. 2 Hawkins, SW cor. SE SW, Section 4-15-14 is dry at 2,432 feet. X-Ray Oil Co.'s No. 1 Phillips, SE cor. NW SE, Section 9-14-14 has been abandoned at 2,475 feet. W. B. Pine's No. 1 Gray, CSL NE NW, Section 13-12-13 was completed for 3,500,000 feet of gas from sand 1,834-37 feet. Nicholson Oil Corp.'s No. 1 Davis, NE cor. NW SE, Section 13-11-13 is making 1,000,000 feet of gas from sand 1,861-80 feet.

Pawnee County

Davis & Tull's No. 1 Dodd, SE cor. SW SW, Section 36-20-6 has sand 2,748-82 feet and after a shot of 70 quarts made 15 bbls. Marland Oil Co. & Mid-Continent Petroleum Co.'s No. 3 Moebius, NW cor. SE NW, Section 33-20-5 was drilled deeper and is now making 125 bbls. from the Wilcox sand 3,718-31 feet.

Payne County

Mulberry Oil Co.'s No. 1 Payne, SW cor. NW NE, Section 5-17-4 in the South Ripley Field is producing 152 bbls. from sand 4,247-93 feet.

Tulsa County

Holmes and others' No. 2 Robinson, CNL NW SE, Section 14-19-10 is drilling at 1,000 feet. No. 2 Henry, NW cor SE, Section 22-19-10 is drilling at 1,200 feet. No. 2 Storm, SE cor., Section 25-19-10, is a machine on the ground. Posey Short is cleaning out No. 1, Lot 10, Block 8, Section 32-19-12 to deepen. C. G. Tiblons' No. 1 Gregory, SE cor. SW, Section 14-18-12 is spudding. J. Crider and others have built the rig for No. 1 Johnstone, SE cor. NE SW, Section 15-16-12.

Winemiller and others' No. 1 Unallotted, SW cor. SE, Section 13-16-12 is a dry hole at total depth of 2,632 feet in the Wilcox sand topped at 2,366 feet. W. A. McCullough's No. 2-A Crosby, CNL NW NE, Section 18-17-13 was completed for 7,000,000 feet of gas in a stray sand 1,665-1,700 feet. Smith & Christie's No. 1 A. Fife, NW cor. SE NE, Section 22-19-11 had a show of oil in the Hominy sand and a hole full of water in the Turkey Mountain sand 2,300-32 feet and has been abandoned. Mitchell Brothers' No. 1 Fife, SW cor. NE SE, Section 15-19-11 is a dry hole at 2,282 feet in the Turkey Mountain sand. Glidden Oil Corp.'s No. 4 A. Fife, CNL SW SE, Section 15-19-11 is making 200 bbls. from the Hominy sand 2,113-72 feet. Simms Oil Co.'s No. 1 Hoyer, CNL SE SW, Section 10-19-10 has been completed for 1,500,000 feet of gas in the Red Fork sand 1,880-86 feet.

Sequoyah County

Sequoyah Gas Co. had the rig on the ground for No. 1 Foxeygann, C NW SW, Section 33-11-25.

Wagoner County

H. H. Taylor is rigging up a machine for No. 1 Lucky, SE cor. SW SW, Section 11-18-15. P. Boyle is rigging up the machine for No. 3 Cole, SE cor. SW SW NE, Section 32-18-16.

Cartwright & Kyle's No. 3 Lucky, CNL SE SW, Section 11-18-15 was completed for 1,000,000 feet of gas in the Wilcox sand 1,303-18 feet. C. Cornett's No. 1 Sier, SE cor. NW, Section 11-18-15 has been abandoned at 1,300 feet.

Beckham County

W. R. Duke's No. 3 McGee, SE cor. NE SE, Section 25-8-22w has been abandoned at 1,955 feet.

Caddo County

Ray & Edwards' No. 1 Cement Townsite, NW cor. SE, Section 3-5-9w is drilling at 600 feet. Livermore and others' No. 2 Rigney, SE cor. SW NW NW, Section 12-5-9w, is making 30 bbls. from sand 2,401-9 feet.

Comanche County

William Green's No. 3 Cox, SE cor. SW NW, Section 24-2-10w is dry at 1,926 feet. Shaw & Rathke's No. 1 Allen, NW cor. NE SW SW, Section 24-2-10w has been abandoned at 2,053 feet. Ashcraft and others' No. 1 School, SE cor., Section 20-2-10w had sandy lime 822-954 feet and is swabbing 5 bbls. Danciger Oil Co.'s No. 1 Spitler, NE cor., Section 16-2-10w is dry at 1,702 feet.

Grady County

Magnolia Petroleum Co. made location for No. 1 Thomas, SW cor. NW SE, Section 24-5-8w. Remington Oil Co.'s No. 1 Fulton, SW cor. NE, Section 13-9-5w is spudding.

The Prairie Oil & Gas Co.'s No. 1 Pooler "B," SE cor. NE NE, Section 22-5-8w was shut in for 23,000,000 feet of gas from top of sand 2,340 feet. Stogner and others' No. 1 McKee, CSL SW SW, Section 14-5-8w is making 26,000,000 feet of gas from sand 2,058-2,267 feet. Little Nick Oil Co.'s No. 1 F. Smith, SW cor. NW, Section 24-5-8w is making 55,000,000 feet of gas from sand 2,140-2,267 feet. Garvin Drilling Co.'s No. 2 Stacy, NE cor. SW, Section 16-3-5w had sand 1,740-60 feet and is pumping 75 bbls. Gypsy Oil Co.'s No. 3 Kayser, NW cor. NE SW, Section 16-3-5w is making 90 bbls. on the pump from sand 1,747-55 feet. Carter Oil Co.'s No. 1 Spaulding, SW cor. SE NE, Section 21-3-5w, swabbed and flowed 697 bbls. the second 24 hours from sand 1,671-1,715 feet. Clark & Cowden's No. 2 C. Kerans, SE cor. SW NE, Section 21-3-5w had broken sand 1,640-1,700 feet, from which it is flowing 550 bbls. W. H. Gant's No. 2 Polson, SW cor. NW SE, Section 27-3-5w is flowing 45 bbls. from sand 1,433-51 feet. Clark & Cowden's No. 4 Kilgore, SW cor. NW NW, Section 27-3-5w an old well was deepened 10 feet 1,806 feet and the production increased from 300 bbls. to 500 bbls.

Hughes County

Transcontinental Oil Co.'s No. 9 Ogle, SE cor. NE NE, Section 4-9-9, swabbed and flowed 255 bbls. from the Hunton lime 3,793-99 feet. Roxana Petroleum Co.'s No. 1 Powell "B," NW cor. NE NE, Section 35-9-9 has been abandoned at 4,045 feet the hole being lost on account of a bad fishing job. S. J. McGee and others made location for No. 1 Riley, NW cor SE, Section 9-8-10.

Jefferson County

Skelly Oil Co.'s No. 1 Ryan, C SE SE, Section 23-6s-6w is pumping 7 bbls. from a broken sand 2,057-65 feet.

Pottawatomie County

Phillips Petroleum Co. made location for No. 1 Wilson, NE cor. SE SE, Section 24-7-3. Mid-Continent Petroleum Co. is building the rig for No. 2 Doyle, SE cor. SW SW, Section 19-7-4. The rig is also being built for No. 1 Doyle, SW cor. SE SW, Section 19-7-4. Pure Oil Co. is putting up the rig for No. 1 Doyle, NE cor. NW NW, Section 30-7-4.

Gypsy Oil Co.'s location for No. 5 Earl, SE cor. NE NW, Section 16-9-5 has been abandoned. Sinclair Oil & Gas Co.'s No. 1 Foreman, SE cor. SW NE, Section 18-9-5 in the Earlsboro Pool which had water in the Wilcox sand 4,339-69 feet has been plugged back to the Hunton lime 4,119-49 feet and is producing 47 bbls.

Seminole County

Barnsdall Oil Co. made location for No. 2 Cudjo, CNL S half SE, Section 11-9-5 in the Earlsboro Pool. The rig is on the ground for No. 2 D. Davis, SE cor. NW SE, Section 11-9-5. Location has been made for No. 1 Wasutka, NE cor. SW, Section 12-9-5. Carter Oil Co. made location for No. 3 Payne, NE cor. NW SE, Section 12-9-5. Interocean Oil Co. has the rig on the ground for No. 1 Payne, NW cor. NE SE, Section 12-9-5. Carter Oil Co. is building the rig for No. 2 Gilliland, SE cor. NW NE, Section 27-9-6 in the Seminole Pool. Location was made for No. 7 Lukes, SW cor. NE NE, Section 27-9-6. No. 8 Lukes was located NW cor. SE NE, Section 27-9-6. Phillips Petroleum Co. No. 5 Strothers, NE cor. NW SE, Section 27-9-6 is rigging up the rotary tools. Carter Oil Co. has dug the cellar for No. 2 Cramer, NW cor. SW SE, Section 34-9-6. The location was made for No. 1 Pounder, SE cor., Section 34-9-6. Empire Gas & Fuel Co. is building the rig for No. 4 Wilson, SW cor. NW NE, Section 34-9-6. Gypsy Oil Co. has the rig on the ground for No. 4 Cudjo, NW cor. SW NE, Section 34-9-6. The cellar has been dug for No. 5 Cudjo, SW cor. NW SE, Section 34-9-6. Pure Oil Co. is erecting the rig for No. 1 Strother, SE cor. NE SW, Section 34-9-6. Carter Oil Co. made location for No. 3 Simpson, NW cor SW SW, Section 35-8-6. The Texas Company is building the rig for No. 3 Strother, NE cor NW NW, Section 2-8-6. The rig for No. 4 Strother is being erected in SW cor. NW, Section 2-8-6. Mid-Continent Petroleum Co. is putting up the rig for No. 1 Cully, NE cor. SE, Section 3-8-6. Mid-Kansas Oil Co. made location for No. 2 Presley, SE cor. NE, Section 3-8-6. Carter Oil Co. made location for No. 4 Bowlegs, SE cor. SW, Section 15-8-6 Bowlegs Pool. No. 4 Walker location was made SW cor. SE, Section 15-8-6. Minnehoma Oil Co. has the rig on the ground for No. 4 Bowlegs, SW cor., Section 15-8-6. T. B. Slick made location for No. 2 Fox, NE cor. NW SE, Section 16-8-6. Gypsy Oil Co. has the rig on the ground for No. 1 Sewell, NE cor. NW, Section 22-8-8. The Prairie Oil & Gas Co. is moving the rig in for No. 1 Davis, NE cor. NW NW, Section 13-9-5 in the Earlsboro Pool. The location was made for No. 2 Davis, CNL E half NE NE, Section 13-9-5.

Magnolia Petroleum Co.'s No. 1 Holmesly, SW cor. NE SE, Section 11-9-5 was deepened from 4,280 feet to 4,286 feet and made 4,050 bbls. the first 24 hours after deepening. Pure Oil Co.'s No. 1 Evans, NW cor. SE, Section 10-9-6 is making 1,500,000 feet of gas from sand 3,580-85 feet. The Texas Company's No. 3 Mayhue, SE cor. NE, Section 14-9-6 has been abandoned at 1,030 feet. No. 1 Mayhue, SE cor. SW NE, Section 14-9-6, Seminole Pool, made 1,270 bbls. the first 24 hours from the Wilcox sand 4,243-68 feet. Carter Oil Co.'s No. 6 Killing, NW cor. SE NW, Section 23-9-6 topped the Wilcox sand at 4,065 feet and at total depth of 4,139 feet made 350 bbls. natural. The well was shot with 30 quarts and when put on air, made 2,200 bbls. No. 3 M. Killing, SE cor. NW NW, Section 23-9-6 flowed, 3,700 bbls. from the Wilcox sand 4,123-51 feet. No. 1 Gilliland, NE cor. NW NE, Section 27-9-6 swabbed 380 bbls., was shot with 30 quarts and made 2,990 bbls. when put on air. Turman Oil Co.'s No. 3 L. Jones, NW cor. SE NE, Section 34-9-6 made 3,298 bbls. the first 24 hours from the Wilcox sand 4,162-91 feet. No. 1-W L. Jones, SE cor. NE, Section 34-9-6 swabbed 600 bbls. natural from the Wilcox sand 4,070-4,106 feet. When the air was applied the well flowed 2,700 bbls. in 24 hours. Empire Gas & Fuel Co.'s No. 2 Wilson, SE cor. NW NE, Section 34-9-6, an old producer, was deepened 10 feet to 4,050 feet and the production increased from 3,400 bbls. to 4,313 bbls. Gypsy Oil Co.'s No. 7 Walker, SW cor. NE SW, Section 15-8-6 made 3,186 bbls. from the Wilcox sand 4,346-54 feet. Indian Territory Illuminating Oil Co.'s No. 5 Goforth, NW cor. SW NE, Section 15-8-6 Bowlegs Pool, flowed 2,970 bbls. the first day from the Wilcox sand 4,132-49 feet.

Stephens County

Skelly Oil Co. is building the rig for No. 2 Enscore, SW cor. NE SE, Section 24-1s-4w. Rotary tools are being rigged up at No. 1 Enscore, NE cor. SE, Section 24-1s-4w. Gilmer and others are rigging up the rotary at No. 2 Stewart, NE cor. SE SE, Section 24-1s-4w.

Carter Oil Co.'s No. 2 Charleston, SW cor. NW, Section 32-1-5w is flowing 102 bbls. from a broken sand 1,739-60 feet. Garvin Drilling Co.'s No. 1 Massey, SW cor., Section 30-1s-8w has been abandoned at 2,653 feet.

ROCKY MOUNTAIN AREA

(Continued from Page 55)

brought in a good well in the Ellis sand on the Lorensen ranch that started at 150 bbls. and the Hill and O'Neil interests on the same ranch brought in the big well of the week in the stray sand below the Ellis, with an initial production of 950 bbls.

The Calpet Syndicate on the Moe found the Ellis at 1,420 feet in Section 28-35-2 and the well is making about 400 bbls. daily. The No. 12 of the Hill interests on the Lorensen came in with a produc-

tion of 100 bbls. from the stray sand.

The Diamond Oil Co. found a showing in the Ellis sand in Section 33-35-2 and then drilled to 1,510 feet where the hole went into water. After testing the show, the well was abandoned.

Oregon Basin

The new black oil discovery well of the Ohio Oil Co. in the Oregon Basin, Park County, Wyoming, is shut in and drilling has been suspended indefinitely. As there is no pipe line to take care of this crude, the well will likely be closed in until a pipe line is laid. The only pipe line out of Oregon Basin is the Ohio Oil Co.'s gas line to Cody.

The Ohio Oil Co. is going to drill a wildcat to the north and west of the Oregon Basin, across the line in Montana. This is to be a deep test on a new structure west of the Elk Basin Field and between Bridger and Red Lodge. As there are no sands expected within 3,000 feet of the surface, this wildcat will be drilled with a rotary outfit.

Salt Creek Completions

In the Salt Creek Field, the Midwest Refining Co. completed six wells the past week through its subsidiary companies. The Wyoming Oil Fields Co. completed a small pumper in Section 23-40-79 at 1,057 feet and the Midwest Oil Co. brought a 40-bbl. pumper in Section 35-40-79 at 1,092 feet.

In Section 27-40-79, the Midwest Oil Co. brought in a Lakota sand well that started off at 1,268 bbls. from that sand which was found at 2,547 feet. The Lakota well being drilled in Section 23-40-79 by the same company reached the sand and is good for 750 bbls. at a depth of 2,498 feet. The Midwest Oil Co. also drilled a third Lakota well in Section 2 39-79 that started off at 864 bbls. from 2,509 feet.

The Wyoming Associated Oil Co. completed a Lakota well in Section 26-40-79 at a depth of 1,965 feet that made 100 bbls. This and the other Lakota sand wells are all shut in, pending the need of production from them.

The Margalexon Oil Co.'s rig, located on the east side of Teapot, caught fire and was destroyed together with a string of tools and an extra stem that was standing in the derrick at the time. The crew was bailing and the sump oil caught fire. A rig on the west side of Teapot is to be moved over and rebuilt to finish the well.

The trials of pumping gas into oil-producing sands in the Wyoming oil fields which have been under way for some months, has appeared to be very successful so far and the method is expected to become common in the larger fields in the near future.

It is now being tried out in Salt Creek Field by the Ohio Oil Co. and the Midwest Refining Co. and the Ohio Oil Co.'s big torch that lit up the heavens every night, just east of the company's compressor plant, has dwindled until it is little more than a yard high over the top of the standpipe. Soon it will be extinguished altogether.

Up in the central part of the field the great gas torch of the Midwest Refining Co. still lights up the night sky with its lurid glare, but it, too, is dwindling and will soon go out forever as the gas it now wastes will be utilized to flow the wells.

Runs From the Fields

Salt Creek	40,720
Teapot	420
Big Muddy	3,130
Grass Creek	2,990
Elk Basin	960
Greybull	25
Rock River	3,020
Rex Lake	170
Lance Creek	700
LaBarge	340
Poison Spider	150
Osage	360
Hamilton Dome	1,210
Ferris	80
Lander	150
Byron	60
Lost Soldier	3,680
Simpson Ridge	30
Cat Creek	2,370
Lake Basin	190
Sunburst	12,000
Florence	700
Moffat	2,245
Tow Creek	805
Fort Collins	3,575
Boulder	25
Rangeley	100
Walden	90
Hog Back	800
Rattlesnake	535
Table Mesa	225
Artesia	1,950
Total	83,705

Monthly Runs From the Fields

WYOMING

Salt Creek	1,197,410
Teapot	28,280
Big Muddy	28,280
Grass Creek	80,140
Elk Basin	25,190
Greybull	605
Rock River	82,433
Rex Lake	5,110
Lance Creek	20,620
LaBarge	7,860
Poison Spider	5,080
Osage	9,890
Hamilton Dome	37,270
Lander	8,215
Byron	1,500
Lost Soldier	103,070
Ferris	2,240
Simpson Ridge	1,220
Total	1,696,013

COLORADO

Florence	17,700
Moffat	70,230
Fort Collins	106,235
Boulder	700
Iles	865
Rangeley	2,800
Tow Creek	21,315
Walden	4,225
Total	224,070
Miscellaneous	1,400
State's totals	2,466,798

MONTANA

Cat Creek	66,610
Lake Basin	5,320
Sunburst	324,000
Total	395,930

NEW MEXICO

Hogback	21,940
Rattlesnake	64,110
Artesia	56,000
Table Mesa	17,335
Total	149,385

AMERICANS WILL DRILL IN KINGDOM OF IRAQ

(Continued from Page 29)

has cost the company over $4,000,000 for tools and material, pipe, road building, trucks and automobiles, surveys and other expenses incidental to drilling in a wild, remote country. The whole concession is on a great desert much of which is flat land; some rolling surface and some very rough bad lands. In dry weather motor transportation is not difficult, but when it rains it is impossible to make any progress through the slippery, sticky clay.

The company expects to build a 650-mile pipe line from the field to a port on the Mediterranean Sea and survey is now being made for this line. It has built camps, water lines and oil lines (for fuel) and most of the drilling material is in the country.

Beirut, a Mediterranean port, is used as a point of entry for people going into Iraq, but freight for the oil region enters through a port at the head of the Persian Gulf.

In ordering material, Mr. Chapman says, the purchases were divided largely between England and the United States. The steel derricks will be of English make, likewise the rig irons, but American-made steel cable and all drill pipe, casing or line pipe will be American made and following A. P. I. specifications. All material for drilling such as engines, boilers, rotary equipment, cable tools, etc., are of American make.

Mr. Chapman in engaging his drillers signed them up for a three-year period. Their expenses to and from the field are paid by the company. The tool pushers receive $600 per month and the drillers $475 per month. The men will work in eight-hour shifts. A baked clay bungalow built with very thick walls and roof to keep out the heat is provided the men, each of whom has a separate sleeping room. They pay their own board.

The men will first go to London then to Marseilles and Beirut. Thence by motor car to Bagdad and by rail to the headquarters.

The Climate of Iraq

Mr. Chapman describes the climate of northern Iraq as subtropical but much more moderate and healthy than is commonly supposed. For quite half the year, he says, the climate is ideal. May to October are the hot months and during these months the temperature at Bagdad rises to as much as 116 degrees Fahrenheit but even in these months, he says, the nights are cooler than the days, the temperature falling 20 to 30 degrees.

From November to the end of March, the weather though sunny is moderately cold with frequent frosts and occasional snow. The seasons are very regular with a dry atmosphere throughout the year. Rain may be expected at intervals from November to April. There is a 7-inch average rainfall per annum at Bagdad and 17 inches per year at Mosul.

"Northern Iraq is inhabited partly by Arabs, partly by Kurds and partly by Turkomans," said Mr. Chapman. "There are a number of settled villages and towns but the population consists largely of nomad tribes who move about within the limits of thier tribal areas.

"The country is administered entirely by Iraq officials. There are, however, British administrative inspectors at Bagdad, Mosul, Kirkuk, Sulaimani and Arbil, which are the principal centers.

"In dealing with the people we advise our English and American employes that the native demands of them a very high standard of justice and fairness and that it behooves every such man to maintain that standard. To use foul language or to strike a local inhabitant might subject one to grave risks.

"The drilling crews and other field operatives are told that a good deal of their time may be taken up in receiving visitors such as tribal chiefs and headmen, but that it is very important in the interests not only of themselves but of future workers in the same area that these tribesmen be given no offense. Considerable patience is sometimes required but it is better to spend an hour drinking tea with a sheik than to incur his hostility. He may refuse payment for services rendered but he will appreciate a present in kind. Arabic is the language of the country and two or three months' close study of it by means of van Ess' book, "The Spoken Arabic of Mesopotamia," should be enough to acquire a fair colloqual knowledge'"

Mr. Chapman has been kept very busy since his arrival in the United States and as much of his time as could be possibly spared was given to a study of American methods of drilling and handling production. While in Tulsa he conferred with officials of the Oklahoma Pipe Line Co. and others on matters having to do with oil transportation. He left Tulsa for New York Sunday morning and will sail for London this week.

PRICES OUT OF LINE WITH INTRINSIC WORTH

(Continued from Page 31)

the same purpose is building at Philadelphia. In addition, the Gulf Oil Corp. is expected to develop the Barco oil concession in Colombia in the near future and will ultimately export from Colombia.

According to reliable information about half a dozen oil refiners on the Atlantic Seaboard of the United States are definitely committed to the use of South American crude; that is, are now using it and intend to do so permanently, provided they can continue to get it.

In March of this year about 2,500,000 bbls. were imported to the Atlantic Coast from South America. Of this quantity the Standard Oil Co. of New Jersey is credited with about 1,500,000 bbls. and the Gulf Refining Co., 500,000 bbls. Other concerns now importing are said to include the Beacon Oil Co. from Colombia; Asiatic Petroleum Co. from Venezuela; Pan American Petroleum Co. from Venezuela; Atlantic Refining Co. from Venezuela; Tide Water Oil Co. from Venezuela, and the New England Oil Refining Co. from Venezuela. It is stated Vacuum Oil Co. may soon be added to this roster.

Incidentally, it seems pretty generally established that the current level of high grade crude oil prices is now out of line with the intrinsic worth of these crudes from a refining viewpoint, based on comparison with the heavier crudes. This is obviously due to a typical flush pool development, and can be regarded as temporary. Although the total output of the country could be expected to hold up in view of new discoveries in West Texas and elsewhere, it is expected that the higher grades of oil will be advanced once a natural decline in Seminole sets in. This is the opinion of oil men who regard conditions in the oil business from their relative standpoints with reference to geographical and economic considerations, and take into account the improbability of a continued flood of 40 gravity crude throughout this year.

The crux of the matter is that despite the intensive foreign development, there is not a great deal of crude oil of the value of Seminole crude in sight, when the total output and demand for oil is taken into consideration. The big refiners will doubtless be glad to take all the Seminole crude they can obtain, irrespective of the trend of importations.

TREND OF MEASUREMENT OF NATURAL GAS

(Continued from Page 33)

ing and the regulator from vibrating. It was found that the hub on both the upper and lower valves made the regulator very noisy and unsteady. The hub on the upper valve alone caused the regulator, at certain flows, to lose its equilibrium and it would take from five to fifteen pounds to bring it back to its original position. Our final conclusion was that valves without any hubs gave by far the best results. The result of the whole investigation, we hope, will be an improvement in the regulators by the manufacturers which, as said before, will truly benefit the measurement of the gas.

One other change, which seems to be a step forward, is the tendency toward the use of smaller ratios of the diameter of the orifice to the diameter of the pipe, $\frac{d}{D}$, or the ratio of $\overline{D}$. On city gate measurement this of course means more tubes but it has the advantage of making the station more flexible during changes in load. Differential valves can be used very effectively with the increase in the number of tubes if so desired.

Considerable improvement has also been made toward the elimination of pulsation from compressor stations.

Several years ago it was found that at certain times, in one of the Oklahoma Natural Gas Corp.'s stations, the inlet meters showed less than the check meters on the opposite side of the street. After considerable investigation it was decided that this variation and fluctuation in the differential was due to the fact that the gas was passing from the regulator to the flange in a spiral motion.

Knowing the Government found it necessary to use straightening vanes in the airplane wind tunnels at McCook Field, Dayton, Ohio, we decided to make a similar installation here. The result was a decrease in the variation between the inlet and outlet meters, the differential steadied down and we were surprised to find the vanes decreased the noise from the station about one-half.

The technical research committee of the Natural Gas Association used the straightening vanes in determining coefficients for their parent orifices at Cleveland. They spent the greater part of last summer at Buffalo testing the effect of straightening vanes on orifice meters. The results of this work is looked forward to with a great deal of interest and no doubt will give us new requirements for setting up a standard orifice meter run.

From a very humble beginning gas measurement has in a few years developed into an important place in the gas industry and our measuring equipment and methods of operation are rapidly improving. Associations, companies, manufacturers are co-operating in establishing better standards. Uniform flow and better regulation are recognized as essential to satisfactory results. Each year brings forth substantial developments in our efforts to get better and more consistent measurement.

WILDCAT OPERATIONS IN PANHANDLE

(Continued from Page 40)

McMan O. & G. Co.'s No. 1 J. L. Noel, SW cor. SE SE Sec. 198, Blk. 3 ..... Shut down 3,150 ft. for orders.
McMan O. & G. Co.'s No. 1 F. E. Percival, NE cor. W ½ NE Sec. 199, Blk. 3 ..... Drilling 3,120 ft.
McMan O. & G. Co.'s No. 2 F. E. Percival, NW cor. W ½ NE Sec. 199, Blk. 3 ..... Drilling 2,745 ft.
Navajo Oil Co.'s No. 1 E. S. Polling, Sec. 22, Blk. 2-Y..... Drilling 1,942 ft.
Republic Prod. Co.'s No. 1 Burnett, Sec. 116, Blk. 4 ..... Topped pay lime 3,109 ft.; 600 ft. oil in hole; cleaning out 3,120 ft.
Roxana Pet. Corp.'s No. 1 Brown, Sec. 106, Blk. 4..... Drilling 2,416 ft.
Roxana Pet. Corp.'s No. 2 Brown, SE cor. Sec. 106, Blk. 4 ..... Drilling 2,512 ft.
Skelly Oil Co.'s No. 1 H. Schafer, SW cor. N ½ Sec. 198, Blk. 3 ..... Drilling 2,995 ft; set 8-in. 2,995 ft.
Skelly Oil Co.'s No. 2 H. Schafer, NW cor. NE Sec. 87, Blk. 4 ..... Drilling 2,540 ft.
Skelly Oil Co.'s No. 3 H. Schafer, NW cor. NE Sec. 86, Blk. 4 ..... Drilling 2,502 ft.
Skelly Oil Co.'s No. 4 H. Schafer, NW cor. Sec. 86, Blk. 4.. Drilling 2,518 ft.
Stubblefield et al's No. 1 E. Cooper, SW cor. NE Sec. 5, Blk. 9, I. & G. N. Sur. ..... Rig.
The Texas Company's No. 1 J. L. Noel, Sec. 187, Blk. 3... Pulling 6-in. to straightream to 3,157 ft.; 10,000,000 ft. of gas at 3,095 ft.
Vitek Oil Co.'s No. 1 J. H. Eller, NE cor. NW Sec. 200, Blk. 3 ..... Rig.
Vitek Oil Co.'s No. 1 C. R. Garner, SW cor. Sec. 113, Blk. 4, I. & G. N. Sur. ..... Shut down 260 ft.
White Deer Oil Co.'s No. 2 Jordan-Brown, Sec. 104, Blk. 4.. Spraying 70 bbls. daily; granite wash 3,118-27 ft.

CHILDRESS COUNTY

Brookins et al's No. 1 Mrs. Givens, 600 feet N and W of SE cor. Sec. 676, W. & M. W. Sur. ..... Spudded and shut down.
C. L. Sloane et al's No. 1 B. P. Smith, Sur. 49, F. P. Knott lands ..... Fishing 1,300 ft.

COLLINGSWORTH COUNTY

Duke & Langford's No. 1 Martha Johnson, Sec. 97, Blk. 22.. Pulling pipe to abandon at 2,616 ft.
Harmon & Deems' No. 1 Wilson (Scott), Sec. 44, Blk. 21.. Location.
Wischkamper's No. 1 fee, C SE Sec. 93, Blk. 16..... Drilling 2,180 ft.

DALLAM COUNTY

James et al's No. 1 fee, Sec. 9, Blk. 47½..... Fishing 2,870 ft.
Harry Skelly et al's No. 1 Capitol Synd., Sec. 19, Blk. 17.. Shut down 2,080 ft.
Marland Oil Co. et al's No. 1 Capitol Syndicate, Sec. 36, Blk. 18, Capitol Syndicate land ..... Shut down 950 ft.

DEAF SMITH COUNTY

Julian & DeGrace's No. 1 Mrs. R. A. Hindley, Sec. 47, Blk. K-8 ..... Drilling 518 ft.
Red Hill Oil Corp.'s No. 1 Barrett, Sec. 93, Blk. K-4..... Shut down 700 ft.

DONLEY COUNTY

A. T. Drilling Co.'s No. 1 F. E. Harrington, Sec. 39, Blk. 3-C ..... Total depth 3,233 ft. reaming to set 6-in.; 1,200 water from 3,115-22; show gas 3,140-60 ft.

GRAY COUNTY

Archer, Blake et al's No. 1 Turneau, Sec. 111, Blk. 2-B.. Spudded and shut down.
Amos et al's No. 1 Crews, NW cor. Sec. 9, Blk. 25..... Spudding.
Bay Shore Oil Co.'s No. 1 C. W. Bradford, Sec. 143, Blk. 2-B ..... Total depth 2,666 ft.; gas shut in and work suspended.
Blackwell & McGee's No. 1 Bowers, Sec. 92, Blk. 2-B ..... Shut down for storage; 1,000 ft. oil in hole from granite wash at 2,965-70 ft.
British-Amer. O. Co.'s No. 1 J. E. Meers, Sec. 107, Blk. 3.. 58,000,000 ft. gas and slight spray oil; fishing bit 3,190 ft.
British American Oil Co.'s No. 1 J. M. Patton, Sec. 61, Blk. B-2 ..... Rigging up.
Cole O. & G. Co.'s (was Magdalene Oil Co.'s) No. 1 J. E. Williams, Sec. 17, Blk. 1 ..... Total depth 3,400 ft.; underreaming for 8¼-in.
Jack Doyle's No. 1 D. W. Osborne, SE cor. Sec. 109, Blk. 3 ..... Rig.
Empire G. & F. Co.'s No. 1 W. C. Archer, SW cor. NE Sec. 174, Blk. 3 ..... 12-in. 954 ft.; 2,470 ft.
Empire G. & F. Co.'s No. 1 B. Hughey, Sec. 129, Blk. 3... Set 6-in. 3,024 ft.; rainbow show oil 3,063 ft., 35,000,000 ft. gas; 1,100 ft. oil and 1,500,000 ft. gas granite wash 3,120-25 ft.; total depth 3,160 ft.; spraying 20 bbls.; drilling 3,207 ft.
Empire G. & F. Co.'s No. 1 J. F. Meers, NE cor. SE Sec. 107, Blk 3 ..... Drilling 1,601 ft.
Empire G. & F. Co.'s No. 1 J. J. Wall, Sec. 161, Blk. 3.... Total depth 2,930 ft.; shut down; 43,000,000 ft. gas; closed in.
Empire G. & F. Co.'s No. 1 Webb, SW cor. Sec. 59, Blk. 25 ..... Drilling sand 2,612 ft.; 48 ft. below sea level; show of oil 2,457 ft.
Foster et al's No. 1 G. Cutebank, SW cor. NE Sec. 65, Blk. 25 ..... Drilling 1,120 ft.
Gray County Pet. Co.'s No. 1 Herndon, Sec. 147, Blk. 3.. Shut down 2,405 ft.
Gulf Production Co.'s No. 1 J. M. Saunders, Sec. 40, Blk. 3 ..... Swabbed 25 bbls. of 40.9 gravity oil at 3,066 ft.
Humble O. & R. Co.'s No. 1 T. B. Haggard, SW cor. Sec. 112, Blk. 3 ..... Drilling 2,520 ft.
Johnson & Martin's No. 1 Fanny Holloway, Sec. 7, Blk. H, A. W. Wallace Sur. ..... Rig on ground.
John G. Lane's No. 1 A. Chapman, Sec. 19, Blk. 1, A. C. & H. B. Sur. ..... Total depth 3,300 ft; 5 3/16-in. casing parted; now pulling.
Magnolia Pet. Co.'s No. 1 fee, Sec. 11, Blk. 3..... 1,800 ft. oil in sandy lime 2,955-87 ft.; shot 120 quarts; total depth 3,004 ft.
Neudigate et al's No. 1 A. Chapman, NE cor. E ½ SE Sec. 52, Blk. 25 ..... Shut down.
Pampa Oil Co.'s No. 1 W. R. Campbell, Sec. 90, Blk. 3.... Fishing for 15½-in. pipe 420 ft.
Pampa Pet. Co.'s No. 1 Mary Leopold, Sec. 141, Blk. 3.... Drilling 3,450 ft.; 600 ft. SW in in hole from 3,320-60 ft.; shut down.
Purple Sage Oil Co.'s No. 1 Johnson, Sec. 8, Rockwall County school land ..... Drilling 1,725 ft.
Riley & Heck's No. 1 Mrs. Hopkins, Sec. 66, Blk. 2-B..... Shut down 2,900 ft.; rig burned.
Ruby Oil Co.'s (was Weir, Kribs & Finklea's) No. 1 B. F. Talley, Sec. 114, Blk. 2-M..... Shut down 635 ft.; temporarily abandoned.
Salisbury & Reynolds' No. 1 M. Huselby, C SE NE NE Sec. 55, Blk. 25, H. & G. N. ..... Location.
C. B. Shafer's No. 1 G. Cole, SE cor. W ½ SW Sec. 105, Blk. 3 ..... Drilling 2,010 ft.
The Texas Company's No. 1 J. B. Barrett, NE cor. NW NW Sec. 130, Blk. 3 ..... Drilling 1,158 ft.
The Texas Company's No. 1 Osborne, Sec. 108, Blk. 3.... Drilling 2,843 ft.
The Texas Company's No. 3 Saunders, C E ½ Sec. 3, B & B Sur. ..... 11,000,000 ft. gas 2,395-2,415 ft.; shot 120 quarts 2,550-80 ft.; cleaning out.
Travis et al's No. 1 J. Back, Sec. 44, Blk. 25 ..... Shot with 120 quarts at 2,650-80 ft.; total depth 2,682 ft.; little oil in hole.
J. Williams et al's No. 1 C. W. Bradford, Sec. 123, Blk. B-2 ..... Rig blown down.

HANSFORD COUNTY

Caldwell et al's No. 1 J. Adriance, Sec. 21, Blk. 2, G. H. & H. Sur. ..... Shut down 585 ft.
Oklavania Oil Co.'s No. 1 Whitson, Sec. 2..... Shut down 3,510 ft.; 1,000 ft. of water in hole from 3,355-3,480 ft.

HARTLEY COUNTY

Amerada Pet. Corp.'s No. 1 Frances Farwell, Sec. 27, Blk. 16 ..... Underreaming 3,080 ft.
Deep Rock Oil Co.'s No. 1 Lyman & Balfour, Sec. 9, Blk. 2 ..... Shut down, 1,710 ft.
Eslick et al's No. 1 J. B. Irving, Sec. 13, Blk. 13..... Drilling 2,400 ft.
J. E. McKanna's No. 1 E. S. Collins, Sec. 3, Blk. LS..... Shut down 3,295 ft.
J. E. McKanna's No. 1 Frances Farwell, Sec. 30, Blk. 22.. Shut down 1,030 ft.
J. E. McKanna's No. 1 J. M. Shelton estate, Sec. 29, Blk. 202 ..... Shut down 3,502 ft.; contract depth.

HEMPHILL COUNTY

A. J. Calhoun's No. 1 J. C. Isaacs, Sec. 189, Blk. C..... Spudded and shut down.
Hoover et al's No. 1 Schaller estate, Sec. 4..... Spudded and shut down.
Hoover et al's No. 1 fee, J. S. Hood Sur. ..... Small show oil and gas 4,027 ft.; hole full water in sandy lime 4,005-10 ft.; shut down 4,380 ft.

HUTCHINSON COUNTY

Amarillo Oil Co.'s No. 1 Ida Ingerton, 9,280 feet from NL and 330 feet from EL Sec. 41, Blk. 47..... Drilling 810 ft.
Anderson & Pritchard's No. 1 Yake, Sec. 1, Blk. J..... Total depth 3,005 ft.; plugging back to shoot.
Dominion Oil Co.'s No. 1 C. H. Jasper, Sec. 23, Blk. M-23, T. C. R. R. Sur. ..... Show of oil 3,033-35 and 1,000,000 ft. of gas 3,015 ft; total depth 3,035 ft.; shut down; 1,500 ft. oil in hole; top lime 2,320 ft.
Marland Oil Co.s (Leo Flowers) No. 1 Carver, Wm. Heath Sur. ..... Spraying 15 bbls. salt water from 3,270-97 ft.; rigging up; 5-in. tools; total depth 3,316 ft.
Pole Cat Oil Co.s No. 1 W. B. Haile, Sec. 24, Blk. M-21.. Rig.
Panfield Oil Co.'s No. 1 Luginbyhl Brothers, Sec. 50, Blk. M-23 ..... Shut down 1,200 ft.
Phillips Pet. Co.'s No. 1 Yake, Sec. 36, Blk. 46..... Cement. 850 ft.
Pool & Golding's No. 1 Mrs. R. A. Jameson, Antonio Dubois Sur. ..... 500,000 ft. gas 1,737-50 ft.; drilling 2,040 ft.
Prairie, Shamrock & Hagy's No. 1 Yake, Sec. 35, Blk. 47.. Total depth 3,290 ft; plugging back to shoot.
Prairie Oil & Gas Co.'s No. 1 J. M. Sanford, SW cor. N ½ S ½ N½ Sec. 85, Blk. 46 ..... Rig on ground.
Prairie O. & G. Co. and Vacuum Oil Co.'s No. 1 Cal Merchant ..... Rig on ground
Vitek Oil Co.'s (was Get Oil Co.'s) No. 1 W. F. Allen.... Spudded and shut down.

LIPSCOMB COUNTY

Everett et al's No. 1 Mrs. H. D. May, Sec. 612, Blk. 43.... Shut down 960 ft.
McCorkle's No. 1 A. Barton ..... Fishing 3,760 ft.
Smith, Kinaley & Ruby's No. 1 C. W. Jones, NE cor. SW Sec. 100, Blk. 43 ..... Drilling 1,060 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 1 Masterson-J, Sec. 59, Blk. O-13.. Drilling 3,150 ft.
Amarillo Oil Co.'s No. 2 Terry Thompson, Sec. 19, Blk. 44.. Fishing 3,100 ft.
Douglas Oil Co.'s No. 1 H. M. Beauchamp, Sec. 112, Blk. 44 ..... Drilling 2,850 ft.
Marland Oil Co.'s No. 1 J. T. Sneed, Jr., Sec. 25, Blk. 1... Shut down 3,073 ft.
Humble O. & R. Co.'s No. 1 Kilgore, Sec. 28, Blk. 44..... Running 5-in. 3,720 ft.
Morton & Co.'s No. 1 Reeder, Sec. 191, Blk 3-T..... Lime 2,895-55 ft.; 45,000,000 ft. gas; shut down.
Phillips Pet. Co.'s No. 2 Special Sneed..... Drilling 1,900 ft.
Moore County Oil Co.'s No. 1 Sneed, Sec. 30, Blk. 6-T..... Drilling by tools 1,970 ft.
Shadler Brothers' No. 1 John Lowery, Sec. 237, Blk. 44.... Shut down 1,365 ft.; 12½-in. casing froze.
Prairie and Shamrock's No. 1 Gober, Sec. 16, Blk. M-21.. Total depth 1,120 ft; to skid rig.

OCHILTREE COUNTY

W. G. Burton's No. 1 Stickler, Sec. 579, Blk. 43..... Shut down 3,740 ft.
Hamilton et al's No. 1 R. E. Wamble, Sec. 144, Blk. 43.... Shut down 250 ft.
McCorkle Pipe Line Co.'s No. 1 R. H. Moore, Sec. 471, Blk. 43 ..... Shut down 1,600 ft.
McCorkle's No. 1 Weinett, Sec. 674, Blk. 43 ..... Rig.
Standard Dev. Co.'s No. 1 Bowden, Sec. 923, Blk. 43..... Shut down 900 ft.

OLDHAM COUNTY

Prairie O. & G. Co.'s No. 1 Landergin, SE cor. NE SW Sec. 46, League 310, Capital land ..... Drilling 2,600 ft.

POTTER COUNTY

Greater Amarillo Pet. Co.'s No. 1 Townsite, Sec. 167, Blk. 2, A. B. & M. Sur. ..... Shut down 2,020 ft.
Farmer O. & G. Co.'s No. 1 J. A. Jones, Sec. 3, Blk. 1.... Shut down 200 ft.
Kelmey Oil Co.'s No. 1 W. H. Bush, Sec. 19, Blk. 9..... Rig.

RANDALL COUNTY

Patterson et al's No. 1 Campbell & McIlroy, NE cor. Sec. 60, Blk. K-14, T. T. R. R. Sur. ..... Spudded and shut down.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Mrs. H. Ledrick & Sons, Sec. 7, Blk. 5-A ..... Shut down 4,910 ft. for material.
Mercer & Dunbar's No. 1 H. A. Gill, Sec. 127, Blk. M-2... Cellar.
Murphy et al's No. 1 Gill, Sec. 31, Blk. M-2 ..... Shut down 650 ft.
Charles Page et al's No. 1 Hamilton, Tract 2, Clay County school land ..... Shut down 440 ft.
Pan-State Oil Co.'s No. 1 A. H. Tandy, Sec. 179, Blk. 42.. Rigged up and shut down.
Pettijohn et al's No. 1 J. A. Meade, Sec. 29, Blk. 1-B..... Skidded rig 20 ft. west and shut down.
Trammel et al's No. 1 A. H. Tandy, School Land Sur..... Spudded and shut down.

SHERMAN COUNTY

Gibson Oil Co.'s No. 1 Bivins, Sec. 35, Blk. 5-B..... Fishing 1,140 ft.
Hagy & Harrington's No. 1 S. F. Flores, C SW Sec. 64, Blk. 3-T, T. & N. O. Sur. ..... Location.
Phillips Pet. Co.'s No. 1 Price & Fuqua, C NE Sec. 33, Blk. 2-B, G. H. & H. Sur. ..... Location.
Whitehead et al's No. 1 Lee Bivins, C SW Sec. 36, Blk. 2, G. H. & H. Sur. ..... Location.

SWISHER COUNTY

R. H. Miller's No. 1 Todd ..... Location temporarily abandoned.

WHEELER COUNTY

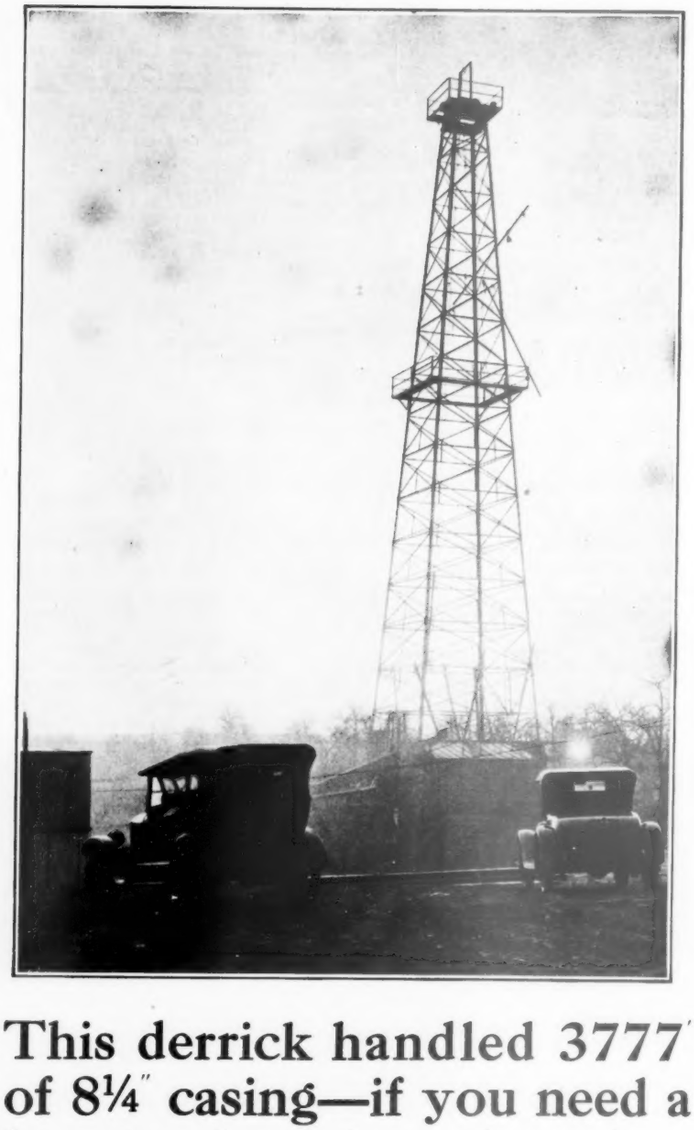
American Ref. Co.'s No. 1 E. E. Carlton, Sec. 29, Blk. 13 Shut down 2,029 ft.; 3,000,000 ft. gas, show of oil, 2,027 ft.
Angus et al's No. 1 G. A. Morgan, SW cor. SW NE Sec. 93, Blk. 17 ..... Drilling 260 ft.
Boyles & Johnson's No. 1 S. L. Lewis, Sec. 40, Blk. 24..... Fishing for bit 2,400 ft.
Continental Oil Co.'s No. 2 J. H. Jackson, SE cor. NE Sec. 11, Blk. 27 ..... Drilling 2,310 ft., showing oil and making 3,000,000 ft. gas; underreaming 6-in. to 2,365 ft.
Foster et al's No. 1 S. H. McDonald, SE cor. NW SW, J. N. Lindsay Sur. ..... Spudded and shut down.
Lone Star Gas Co.'s No. 1 C. A. Linkey, C NW SE Sec. 129, Blk. 23 ..... Drilling 720 ft.
Lone Star Gas Co.'s No. 1 R. S. Alexander, NE NW Sec. 11, Blk. 27 ..... Drilling 210 ft.
Magnolia Pet. Co.'s No. 1 Laycock, Sec. 9, Blk. 27..... Drilling 2,180 ft.; making 3,000,000 ft. gas 2,070 ft.
Magnolia Pet. Co.'s No. 1 J. A. Worley, NE cor. Sec. 39, Sec. 42, Blk. 24 ..... Drilling 1,670 ft.
Marland Oil Co.'s No. 2 W. E. Bentley..... Underreaming 8¼-in. to 1,500 ft.
Murchison & Fain's No. 1 Close, Sec. 77, Blk. 23 ..... 10,000,000 ft. gas 1,585-1,610 ft.; shut down.
North Texas Oil Co.'s No. 1 J. H. Jackson, NE NW Sec. 11, Blk. 27 ..... Drilling 400 ft.
J. J. Rook's No. 1 M. Mertel, SE NE Sec. 4, Blk. 24, H. & G. N. Sur. ..... Location.
J. J. Rock Co.'s No. 1 T. C. Jones, Sec. 1, Blk. 34 ..... Fishing casing 1,300 ft.
J. J. Rook's No. 1 C. W. Porter, SW cor. NW Sec. 41, Blk. 24 ..... Underreaming 8¼-in. to 1,400 ft.
Wheeler O. & G. Co.'s No. 1 P. J. Sorenson, Sec. 53, Blk. A-4 ..... Spudded and shut down.
Smith, Brady et al's No. 1 P. J. Sorenson, Sec. 53, Blk. 4-A ..... Shut down 1,470 ft. for pipe.
E. L. Woodley, Jr., No. 1 Woodley, Sr., Sec. 13, Blk. 5-A.. Running 5-in.; underreaming to 2,235 ft.
Watchorn O. & G. Co.'s No. 1 F. E. Shelton, C NE NE Sec. 22, Blk. 24 ..... Drilling 300 ft.

DAVIS No. 1

at

Pearson Switch, Oklahoma

drilled with an O'Brien Type 50 Combination Derrick



This derrick handled 3777' of 8¼" casing—if you need a heavier derrick we have it—

O'Brien No. 60

Rig Equipment Co.

Tulsa, Oklahoma

O'Brien Steel Construction Co.

Washington, Pa.

MAGNOLIA CUTS CRUDE OIL PRICES

(Continued from Page 31)

in that field since November 1 run from $1.04 to $1.34, according to gravity.

It's price for oil in Burbank has suffered cuts from $1.04 to $1.40 per barrel, according to gravity. It runs over 6,900 bbls. a day from the Healdton Field where it has cut crude since last fall 60 cents to 98 cents per barrel, according to gravity. In its Wewoka district where its pipe line has been running 29,000 bbls. per day recently (mostly from the Seminole Field) its price reduction has been $1.46 per barrel. Its north Texas reductions will average $1.34 per barrel, since early in November.

Where Magnolia Buys

The Magnolia Petroleum Co.'s cut in prices affect the company's purchases in the following fields: Butler County, Kansas; Bristow, Burbank, Duncan, Cement, Cushing, Healdton, Hewitt, Graham, Walters, Beaver Creek, Wewoka and Yale in Oklahoma; Archer, Burk, Coleman, Comanche, Electra, Corsicana, Henrietta, Olden, Iatan, Panola, Mexia, Wortham, Lytton Springs, Stephens and Thrall in Texas. The company also buys in Mirando, the Panhandle, Luling and in the Gulf Coast, but none of these fields were affected excepting Luling for which crude the company announces a flat price of $1 per barrel, a 5-cent cut.

The Magnolia company has long been the largest buyer of oil in the southern Oklahoma fields where the bulk of the Oklahoma crude below 30 gravity is produced. Putting a flat price of $1.05 per barrel on all its purchases below 33 degrees affects producers in Carter, Stephens, Cotton, Garvin Counties.

Duncan has oil of 29, 30, 31 and 32 degrees gravity; Fox-Graham produces some 27, 28, 29 and 32 gravity crude; Healdton, 28, 29, 30, 31 and 32 gravity. Hewitt has about 1,200 bbls., production of 32 gravity; Kilgore's production runs 30 gravity. Loco, 24, 27, 28 and 30 gravity; Milroy, 29 gravity; Robberson, 19, 20, 21, 22, 23, 25 and 26 gravity and Walters 27, 28, 29, 30, 31 and 32 gravity.

The Magnolia Petroleum Co.'s crude runs from the Healdton Field are second in quantity only to those of the Ozark Pipe Line. The Magnolia leads in runs from the Loco and Milroy Pools. In the Robberson Field the production is divided between the Magnolia and the Texas Pacific Coal & Oil Co. In the Sholom Alechem Field the Oklahoma Pipe Line Co. leads, with the Magnolia second. The Magnolia leads in runs from the Graham Field.

Magnolia Petroleum Co.'s crude price reductions since November 1, 1926:

Gravity—	Nov. 1 1926	Apr. 7 1927	Diff.
Below 28	$1.30	$1.05	$ .25
28-28.9	1.65	1.05	.60
29-29.9	1.73	1.05	.68
30-30.9	1.81	1.05	.76
31-31.9	1.89	1.05	.84
32-32.9	1.97	1.05	.92
33-33.9	2.05	1.07	.98
34-34.9	2.13	1.09	1.04
35-35.9	2.21	1.11	1.10
36-36.9	2.29	1.13	1.16
37-37.9	2.37	1.15	1.22
38-38.9	2.45	1.17	1.28
39-39.9	2.53	1.19	1.34
40-40.9	2.61	1.21	1.40
41-41.9	2.69	1.23	1.46
42-42.9	2.77	1.25	1.52
43-43.9	2.85	1.27	1.58
44-44.9	2.93	1.29	1.64
45-45.9	3.01	1.31	1.70
46-46.9	3.09	1.33	1.76
47-47.9	3.17	1.35	1.82
48-48.9	3.25	1.37	1.88
49-49.9	3.33	1.39	1.94
50-50.9	3.41	1.41	2.00
51-51.9	3.49	1.43	2.06
52 and above	3.57	1.45	2.12

Magnolia Runs

The latest statement of pipe line runs by the Magnolia Petroleum Co. is that for the month of March when it ran 1,958,831 bbls. out of Oklahoma and Kansas as against 1,797,183 bbls. in February, or a daily average in March of 63,188 bbls., as against 64,212 bbls. a day in February, indicating a decline in runs from the two states in March.

The company's runs out of the Seminole area in March aggregated 741,926.32 bbls. in March. At present it is reported to be running about 20,000 bbls. a day out of Seminole alone of which about 9,000 bbls. is its own production and about 11,000 bbls. is purchased oil.

Its statement of runs for March in Oklahoma, Kansas and Texas was as follows:

Magnolia Pipe Line Runs, March, 1927
Kansas-Oklahoma

Field—	Total Runs Bbls.
Augusta	49,571.01
Bristow	.....
Burbank	44,449.76
Duncan	55,396.01
Cement	26,781.04
Cushing	208,533.93
Healdton	273,676.62
Hewitt-Graham	161,637.79
Walters-Beaver Creek	9,763.71
Wewoka	317,169.39
Yale	69,931.53
Seminole	741,926.32
Total Oklahoma and Kansas	1,958,831.11
Texas	
Archer	85,835.42
Burk	80,526.76
Coleman	75.66
Comanche	22,227.55
Electra	119,713.89
Corsicana, heavy	7,107.79
Henrietta	5,365.68
Iatan	15,075.35
Luling	445,500.57
Lytton Springs	51,872.71
Mexia-Wortham	52,080.97
Mirando	131,931.54
Olden	15,841.06
Panhandle	278,824.24
Panola County	602.20
Stephens	11,508.78
Thrall	1,290.50
Corsicana, light	31,109.41
Gulf Coast	94,856.13
Total Texas	1,451,345.35

Piling Up Stocks

The company has been accumulating crude stocks in Oklahoma all the year thus far. In January it reported 3,284,387 bbls.; at the close of February, 3,920,813 bbls.; at the close of March, 4,585,518 bbls. The company ran an average of 21,442 bbls. a day of crude to storage in Oklahoma in March.

SHREVEPORT MARKETS EXTREMELY UNSETTLED

SHREVEPORT, La., Apr. 11.—North Louisiana and Arkansas refinery markets the past week reflected the uncertainty of the crude situation and on Monday from a price standpoint were as unfavorable as at any time in the past four years. Expectance of further crude cuts in other sections of the Mid-Continent with their extension into this district caused an extremely unsettled tone. All refineries in this district were quoting 6½ cents on U. S. Motor gasoline and there were reports that some material was moved out of the territory a quarter cent lower. Due to a seasonal increase in motor consumption there has been an improved demand from refineries but because of the heavy production and competition from other sections of the Mid-Continent buyers have been able to obtain concessions on material to cover their current needs.

Grade C natural gasoline Monday was being bought here on a basis of 4 cents f.o.b. Group 3, or 4¼ cents Monroe, La. At present the majority of natural gasoline used by North Louisiana and Arkansas refineries is coming out of north Texas or Oklahoma, principally the latter, with Louisiana gasoline going into storage, wherever possible.

Gas oil Monday was worth from 3 to 3¼ cents with refineries here willing to pay that price for material suitable for cracking stocks. There was practically no outside demand for this product.

Fuel oil was considerably weaker, although refineries were still quoting from $1.15 to $1.17½. Some refinery fuel was reported purchased both from Arkansas and Louisiana refineries, however, as low as $1.05 and $1.10.

MUST HAVE EXPERIENCE

According to an order passed by the Oklahoma Corporation Commission, on and after March 31, 1927, no person shall be eligible for appointment as deputy oil and gas conservation agent unless he shall have had at least seven years of actual experience in oil field work. This experience should include work as tool dresser, driller, pumper or in various other capacities in drilling and producing oil and handling high-pressure gas wells.

PREVENTING ACCIDENTS IN THE OIL FIELDS

(Continued from Page 80)

around oil derricks, especially dangerous in gaseous places.

Loose Material

During 1923, there were 159 lost-time accidents causing a loss of 5,795 days and 6 fatalities in the California oil fields alone, caused by material and tools falling from the derrick on those below. In other words, 10 per cent of the fatalities in the drilling and producing division of the California oil industry in 1923 were caused by tools or material falling out of the derrick. The records of these accidents show that in many instances the accidents could have been avoided had proper precaution been taken to fasten securely or remove all loose material above the derrick floor.

Pipe hooks that are dropped by derrickmen from working platforms in the derrick cause many accidents to floormen. When pipe hooks are used above the derrick floor they should be tied to the derrick with a rope in such a manner as to prevent the hook from falling.

Greater care should be taken in the construction of wind breaks and shelters at the working platforms in the derricks. These are often of flimsy construction, usually being built out of scrap corrugated iron or lumber picked up around the derrick. Wind pressures of 20 pounds per square foot are common in the oil fields and a 2 by 10-foot sheet of corrugated iron may be required to withstand a total wind force of 400 pounds. It is doubtful if many platform shelters will resist a wind pressure of 20 pounds to the square foot. That many have not been constructed to withstand the force of a wind storm is verified by the number of sheets of iron and lumber used in shelter construction a person sees flying in the air when an oil field is visited by a hurricane or tornado.

Stairs

Stairs should be provided when derrick floors are more than 1½ feet above the ground. Such stairs should be substantially constructed and properly proportioned. The rise (distance between the top of one step to the top of the next) for a comfortable stair should be from 7 to 7½ inches. Stairs having a greater rise are too steep and cause stumbling accidents. The run (horizontal distance from the face of one riser to the face of the next) must bear a certain relation to the rise. For a comfortable stair the sum of the rise and run should be equal to from 17 to 17½ inches. Stairs having a total rise of 4 feet or more should have hand rails. The height of hand rails should be 2½ feet above the tread, measured vertically.

The open sides of all derricks should be fenced in with a two-rail railing when the floor is 4 feet or more above the ground. Such railings are needed especially at night on producing wells. Usually pumping wells are but dimly lighted or not lighted at all and pumpers often walk too close to the edge of an unprotected floor and fall off. Railings should be of substantial construction 42 inches high with a mid-rail 18 inches above the floor.

Bull Wheels

Bull wheels are used in the cable tool system of drilling oil wells for applying power in hoisting drilling tools out of the well. The drilling cable is spooled on the bull wheel shaft and unwound as the depth of the well increases. In production work, bull wheels are used to pull tubing and rods, and for re-drilling work with cable tools. Seldom are they used when drilling with rotary equipment. Rotation is imparted to the bull wheels by one or two lines of bull ropes which may be 2¼ or 2½-inch diameter manila rope or 1-inch wire cable connecting the tug pulley on the band wheel with the rim of the tug or left hand bull wheel. The ropes are crossed between the tug pulley and the bull wheels in order to reverse the direction of power.

Bull wheel and bull rope hazards are of several kinds. There are those caused by men falling across the bull ropes and being carried into the bull wheel; those due to men getting caught on the bull wheel when treading the wheels; and those hazards presented when bull wheels are torn from their bearings.

The greatest number of serious injuries caused by bull ropes, many of which prove fatal, result when oil workers attempt to climb through moving bull ropes. Many attempts have been made to safeguard against bull rope hazards. Various types of railing guards have been constructed along the side of the bull ropes that is towards the center of the derrick, but such guards were not practical because they interfered with the work of the crew on the derrick floor.

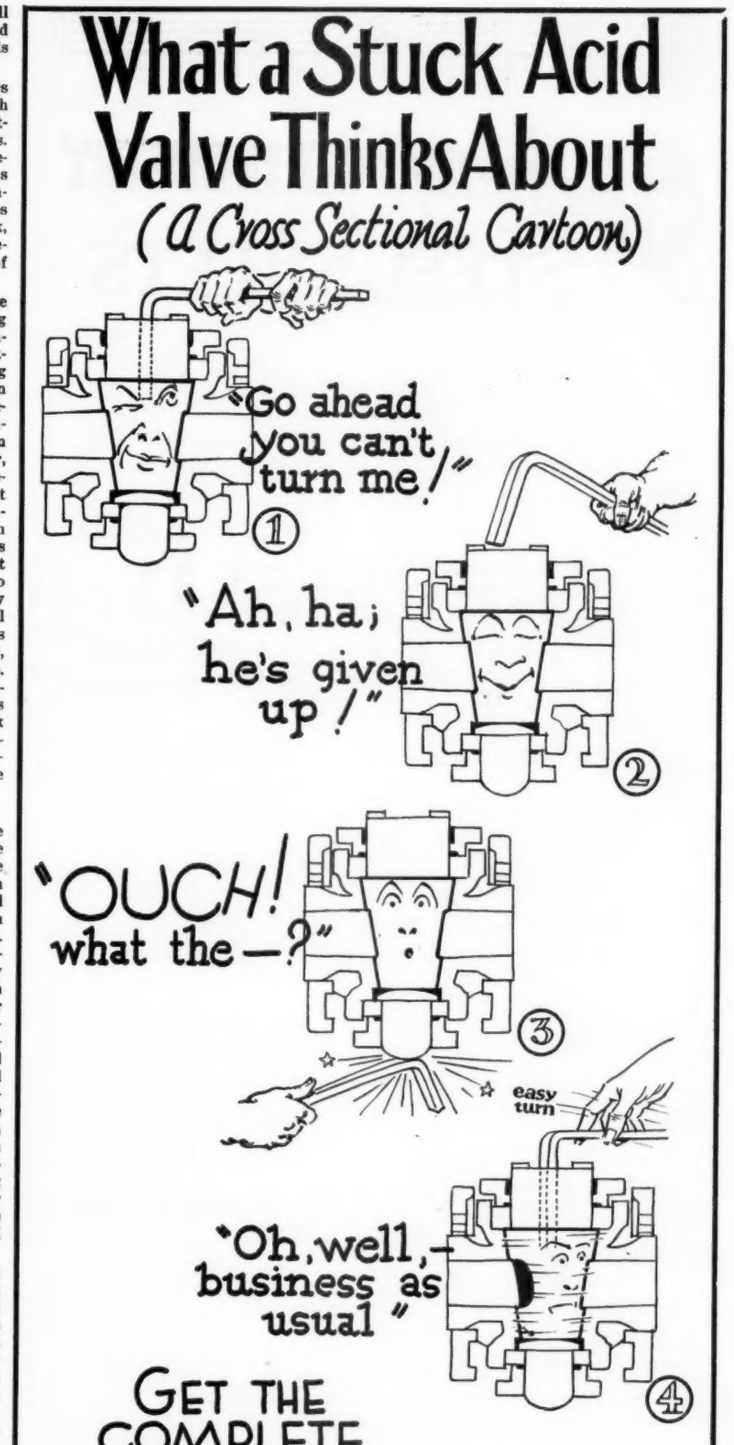
Instructing workmen to stand on one side of the brake handle when applying the brake will avert many serious injuries. Leaning over the handle or putting a leg over the handle when applying pressure to the brake has caused broken jaws, loosened and broken teeth, fractured skulls, broken legs and other injuries. Often such injuries have been fatal. Experience has shown, however, that, though men know better, they frequently get hurt because they do not put into practice what they know. Some operators are reluctant to rely entirely upon the workmen to take care of themselves and are working towards an improvement in the design of braking machinery so men can not get hurt. Several noteworthy attempts have been made to build bull and calf wheel brakes at which both ends of the brake band pull simultaneously, when pressure is applied at the handle. The arrangement and multiplicity of levers through which the braking force is applied is being worked out so that kick backs at the lever handle will be eliminated. These attempts are still in the experimental stage but the results are promising.

Wheel and Belt Guards

No workman should go out on the walking beam until the flywheel of the engine has been blocked so the engine can not turn over. Many men have been thrown from the beam when their added weight upset the balance of the beam and allowed the engine to turn over. Throttle valves on steam engines at derricks are seldom tight. Steam leaks by them, gradually accumulates in the steam chest of the engine and the slightest jar on the engine belt, walking beam or pitman is usually sufficient to start the engine. Several instances can be cited where engines turned over and continued to run when vibration opened the throttle valves while a man was out on the beam oiling the T-bearings. These men hung on to the wealking beam with much difficulty until help arrived and the engines were shut off. Securely blocking engine flywheels with crow bars, pipe or heavy sticks of timber and opening the relief valves in the steam chests will prevent a recurrence of such accidents.

Some operators fasten a metal rod along the side of the walking beam in order to give a man a hand rail to hold on to when going out on the beam. This railing is made out of ⅞-inch sucker rods with the ends flattened and drilled for 20d spikes. The distance between the horizontal part of the railing and the top of the walking beam is 24 inches. In order that the guard rail will not jam against the side of the derrick when the pitman is taken off the wrist pin and the well end of the beam raised that part of the railing nearest the sampson post is spiked to the beam at an angle of approximately 50 degrees with the horizontal. This simple safeguard should be installed on every walking beam to take care of a contingency that is fairly sure to happen at some time to every pumper.

A safe means for getting on the walking beam should be provided. When no ladder is provided by which to get from the roof of the belt house to the top of the walking beam there should be a hand hold attached to the walking beam. Well-built safeguards show employes more than anything else the sincere interest that employers have in accident prevention work. When workers use safety devices they think of safety not only as something which is to keep them from getting hurt but as something which also makes their work easier. Their enthusi-



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asm is aroused and they become safer workers.

Engine Guards

Good engine guards for oil field use should be simple in design and construction but strong enough to withstand ordinary use. The materials employed in engine guard construction at oil derricks are wood, steel bars, steel pipe and woven wire. Wooden guards are extensively used because they can be fabricated by rig builders, carpenters, or the workmen at the well, usually out of surplus material left after the derricks have been constructed. Metal guards are used by operators who have machine shop equipment, principally welding outfits, or are in a position to have them built in commerical shops. It does not matter what material is used if the guards are properly built, installed and used. The amount of clearance possible between the moving machinery and the guard has a great deal to do with the type of guard best suited for the purpose. When the clearance is less than 15 inches, the spaces between the frame of the guard should be covered with woven wire. When this distance is less than 4 inches, the largest opening or the mesh of the wire should not exceed one-half inch. If the clearance is over 4 inches but less than 15 inches, the largest opening should be 2 inches square or the equivalent in any other design. Adhering to these specifications for size of openings in the woven wire filler for engine guards will save fingers and hands from injury by making it difficult to put them through the openings in the wire into moving machinery.

First Aid

So many men are burned and scalded by steam and hot water from engine exhausts and from contact with hot steam lines at oil derricks that some knowledge of the proper method of first aid treatment to burns may be the means of preventing infection and relieving much pain.

Every burn should receive immediate treatment. Slight burns are often neglected and severe burns that are not properly treated open the way for infection to set in. Burns are more frequently infected than wounds because burns partly destroy the tissues and consequently reduce their powers to resist infection. Destroyed tissues are in themselves a source of poisoning as they are absorbed by the blood around the wound.

In all cases of burns, loose clothing, except that which adheres to the skin should be removed and the air excluded from the burned surfaces as quickly as possible by the application of picric-acid gauze, moistened with steam or clean water. Picric-acid gauze, should be in every first aid cabinet.

After applying the dressing to exclude the air, the burn should be covered with a loose bandage, care being taken that the bandages are not so tight that they will rub off the burned skin. Burned fingers and toes should be separated and the backs of the ears kept away from the head with sterile gauze before applying the bandages.

If the tissues have been deeply burned or scalded or the blisters are extensive, medical treatment should speedily follow first aid.

Many disastrous gas explosions and fires have occurred at oil wells where gas engines are used for drilling and pumping. Many of these have been due to backfire at the air intake valves. A section of pipe screwed into the intake valve and extending up through the roof of the engine house will prevent the flames from igniting accumulated gas within the engine house when a backfire occurs at the intake valve.

PIPE LINE CONSTRUCTION PLANS IN WEST TEXAS

(Continued from Page 75)

and the company's refinery at Baytown on the Houston ship channel. The same method of moving the West Texas crude will be employed when it reaches Ingleside. In addition consignments will be made to New Jersey refining plants.

It is reported the Gulf Pipe Line Co., a subsidiary of the Gulf Oil Corp., will spend around $10,000,000 in extending its lines from the North Central Texas fields down to Big Lake Field and thence to the Upton-Crane and other fields, but nothing definite has been decided upon yet.

The Humble company determined upon the McCamey-Ingleside route rather than lay a new line from the McCamey district to its central station at Comyn in the northeastern part of Comanche County, and another new line east to the junction of the Mexia-Wortham-Comyn lines.

Panhandle Line Progress

The Humble Co. has laid approximately 250 miles of its 10-inch line from Comyn station to the Panhandle fields. There is a gap of about 75 miles to be connected, gangs having started work on both ends. It is expected to have the line completed about May 1. It will have a capacity of 30,000 bbls. per day. Pumping stations are located at Burnett in the Panhandle; Allenreid, Childress, Truscett, Rule, Hawley, Putnam and the terminus at Comyn. All, except the Burnett station, are equipped with four oil engines and four pumps. The Burnett station will be a steam station so as to heat the crude if necessary in cold weather.

The Humble Co. is handling a large amount of Seminole, Okla., crude through its Baytown and Texas City terminals, loading tankers for the New Jersey refineries. The crude is brought down to the Gulf in tank cars, 50 or more tank cars in a train, each loaded with an average of 200 bbls. As many as 10 trains of tank cars per day have reached the Gulf terminals recently. Moving the crude in tank cars is costly, but it is desirable to get it out of the field and to the refineries as quickly as possible.

If the new Carey Lake Pool in Cherokee County, brought in recently by the Humble Oil & Refining Co. proves as prolific as is expected, it will be necessary to lay a pipe line from that district to connect with the Mexia-Wortham lines. This, it is said, is a proposition for the future and depends on what conditions may arise. The well is shut in. A short line has been laid to sidings on the lines of the Southern Pacific and Missouri Pacific Railroads and tank car shipments made for the present. The Carey Lake Dome is between the two railroads. The new dome will be developed gradually. The Humble company has some 14,000 acres around the producer, thus eliminating offsets and hasty drilling on an overloaded crude market.

Changes in Routing Crude

A decided change in the routing of crude from the oil fields west of the Mississippi River to the big eastern refineries has taken place during the past five years. Formerly, all the Mid-Continent crude and much of the North Texas production was pumped north by the Prairie Pipe Line Co. to Whiting, Ind., and delivered there or at Wood River, Ill., to eastern lines for transportation across Indiana, Ohio, northwestern Pennsylvania, across the Alleghenies and thence across New Jersey to seaboard. Half a dozen different pipe line companies handled the deliveries. Practically the only crude sent to the Gulf was that used by refineries located at Gulf ports.

The expansion of producing fields rendered the old method of routing crude expensive and cumbersome, since the old eastern lines had to take care of local production as well as the western crude offered for transportation. Many of the old eastern lines had been in service for years and were badly in need of replacements. Extreme cold weather hampered deliveries and slowed up the progress of the oil.

With the rapid development of the fields in North Central Texas and North Louisiana pipe lines were laid to the Gulf of Mexico and crude diverted in that direction. Terminals, consisting of docks and tank farms, were built and the crude sent north in tankers. These tankers carry from 40,000 to 120,000 bbls. and make the trip through the Gulf, around the Key West Point and up along the Atlantic Coast in about eight days. They are loaded and unloaded with immense

pumps at the terminals in from 12 to 24 hours and maintain regular schedules.

The Oil and Gas Journal prints a monthly table giving the refined and crude tanker shipments of each company shipping from ports on the Gulf of Mexico. Nearly 7,000,000 bbls. of crude were handled from the Gulf oil terminals during February and approximately the same amount during January. The cost is much less than transporting by pipe line over the old route and the time of delivery is shorter, strange as that may seem.

Millions of dollars have been invested in docks and pumping stations to facilitate this transportation by water. Dredges are in constant use keeping the channels to the docks open and deep so that these ocean-going tankers can be loaded without delay.

The development of fields in the West Texas counties and additional pipe lines to the Gulf, such as the Humble company is starting, will increase crude tanker shipments from coastal ports. It is probable that in time the old eastern trunk lines will be abandoned. They are all 8-inch lines, laid years ago with small pumps and engines in the stations compared with the modern pumping station on the 10 and 12-inch pipe lines of today.

ALBERTA OIL OPERATORS

CHATHAM, Ontario, Apr. 9. — The Alberta Oil Operators Association, at its annual meeting held at Calgary recently, elected the following officers for the ensuing year: W. S. Herron, president; George Cloakey, Sr., first vice president; J. H. Goodwin, second vice president; A. G. Spooner, secretary-treasurer. The executive committee for 1927 includes the following: W. E. McLeod, McLeod Oil Co.; A. G. Spooner, Vulcan Oils, Ltd.; W. S. Herron, Okalta Oils, Ltd.; George Cloakey, Seneca Oils, Ltd.; J. H. Goodwin, British Dominion Oil Corp.; I. Saunders, Stockmen Oils, Ltd.; J. H. McLeod, Dalhousie Oil Co.; F. M. Graham, New McDougall-Segur Oil Co.; H. V. O'Reilly, Mid Valley Oil Co.; R. W. Ward, Dolomite Oils, Ltd.. Appointment of committees was left to the executive. It was decided to make strong representations to the Dominion government in favor of more adequate salaries to the petroleum engineers representing the government in the western fields.

CALIFORNIA CUT NOT TO AFFECT DIVIDENDS

LOS ANGELES, Calif., Apr. 9.—F. C. Van Deinse, vice president of California Petroleum Corp., has issued a statement assuring stockholders that recent reductions in the price of crude oil probably will cause no curtailment of dividends.

"While it must be conceded that market prices for oil and oil products at this time are discouraging to producers and marketers alike," he says, "we know the effect will be but transitory so far as the oil industry as a whole is concerned. So far as the effect on California Petroleum Corp. is concerned, indications support the assumption and belief that there will be no curtailment of its dividends for an indefinite period ahead."

TO EXAMINE TECHNOLOGISTS

WASHINGTON, D. C., Apr. 9.—The United States Civil Service Commission has announced competitive examinations for the positions of petroleum technologist (production or refining), $3,800; associate petroleum technologist (production or refining), $3,000; assistant petroleum technologist (production or refining), $2,400. Applications for these positions must be filed with the Civil Service Commission at Washington, D. C., not later than April 26.

RECEIPTS OF CALIFORNIA OILS AND IMPORTS OF PETROLEUM

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the month of March totaled 3,304,000 bbls., a daily average of 106,581 bbls., compared with 2,487,000 bbls., a daily average of 88,821 bbls. for the month of February.

Receipts at Atlantic and Gulf Coast ports for the week ended April 2, totaled 235,000 bbls., a daily average of 33,571 bbls., against 989,000 bbls., a daily average of 141,286 bbls. for the week ended March 26.

At Atlantic Coast Ports—	Total Month March	Total Month February	Week End. April 2	Week End. March 26
Baltimore	515,000	734,000	70,000	.....
Boston	170,000	85,000	.....	170,000
New York	1,758,000	917,000	165,000	491,000
Philadelphia	430,000	240,000	.....	148,000
Others	416,000	511,000	.....	180,000
Total	3,289,000	2,487,000	235,000	989,000
Daily average	106,097	88,821	33,571	141,286
At Gulf Coast Ports—				
Tampa	15,000	.....	.....	.....
Daily average	484	.....	.....	.....
Total Atlantic and Gulf Coast Ports	3,304,000	2,487,000	235,000	989,000
Daily average	106,581	88,821	33,571	141,286

Distribution of total California oil receipts is as follows:

Crude	644,000	827,000	.....	312,000
Gasoline	953,000	788,000	.....	360,000
Gas oil	525,000	396,000	235,000	75,000
Fuel oil	1,182,000	476,000	.....	242,000
	3,304,000	2,487,000	235,000	989,000

According to figures collected by the American Petroleum Institute, imports of crude and refined oils at the principal ports for the month of March totaled 5,176,000 bbls., a daily average of 166,967 bbls., compared with 5,686,000 bbls., a daily average of 203,072 bbls. for the month of February.

Imports at the principal United States ports for the week ended April 2 totaled 1,452,000 bbls., a daily average of 207,429 bbls., compared with 802,000 bbls., a daily average of 114,571 bbls. for the week ended March 26.

At Atlantic Coast Ports—	Total Month March	Total Month February	Week End. April 2	Week End. March 26
Baltimore	145,000	336,000	.....	.....
Boston	408,000	404,000	77,000	.....
New York	1,968,000	2,444,000	476,000	354,000
Philadelphia	286,000	149,000	207,000	.....
Others	810,000	748,000	321,000	171,000
Total	3,617,000	4,081,000	1,081,000	525,000
Daily average	116,677	145,750	154,429	75,000
At Gulf Coast Ports—				
Galveston district	209,000	134,000	18,000	64,000
New Orleans and Baton Rouge	1,124,000	1,310,000	313,000	141,000
Port Arthur and Sabine district	75,000	60,000	.....	50,000
Tampa	151,000	101,000	40,000	22,000
Total	1,559,000	1,605,000	371,000	277,000
Daily average	50,290	57,322	53,000	39,571
At All United States Ports—				
Total	5,176,000	5,686,000	1,452,000	802,000
Daily average	166,967	203,072	207,429	114,571

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TEXAS PACIFIC COAL AND OIL COMPANY

FORT WORTH, TEXAS

ATLANTIC RECEIPTS BY TANKER SHOW DECREASE DURING MARCH

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Apr. 11.—For the first time in several years receipts of crude and refined oil by tanker at Atlantic Coast ports showed a decline compared with the corresponding month of the preceding year, the aggregate in March, estimated at 17,615,000 bbls., comparing with 18,435,000 bbls. in March, 1926. The daily average for March of this year was 565,000 bbls., compared with 592,000 bbls. in March, 1926.

As a result of the trend in oil receipts during the past year several developments looms as important in the American oil industry, especially from a price viewpoint. The March, 1927, receipts mark the most advanced stage so far in this trend.

One development indicated by the receipts is the passing of Mexico, temporarily at least, from the picture as a dominating factor in the American markets. The March, 1927, imports to the Atlantic Coast from Mexico totaled only 1,148,000 bbls., a daily average of 36,000 bbls., against 4,720,000 bbls., or 152,000 bbls. a day, in March of last year.

South American Gain

Another development, partially offsetting the effect of Mexico's decline, is the increasing importance of South American oil in the domestic situation. The imports at Atlantic ports from South America (including a small quantity from Trinidad) in March reached a new high record for all time of 2,462,000 bbls., or 81,000 bbls. a day. This contrasts with 814,000 bbls., or 26,000 bbls. a day in March a year ago. South America is not yet a dominant factor here, but its importance is growing so fast that within a few months shipments may be large enough to offset entirely any decline in the position of Mexico.

Another development partially reflected in the March, 1927, receipts of oil by water at Atlantic Coast ports is the return of California as a big price factor in the markets east of the Rockies, this coming, strangely enough, at a time when there is a terrific overproduction in the Mid-Continent.

The March, 1927, receipts from California totaled 3,164,000 bbls., a daily average of 103,000 bbls., this being a slight increase over March, 1926.

The Atlantic seaboard refiners and marketers seem to be increasing their water shipments from the Gulf Coast to the Atlantic despite the fact that they are also taking an increased amount of western oil by pipe line, moved to their plants through the transcontinental pipe line system.

Receipts From Gulf

The receipts from the Gulf in March, 1927, amounted to 10,841,000 bbls., a daily average of 345,000 bbls. In March, 1926, the receipts from the Gulf were 9,880,000 bbls., or 317,000 bbls. a day. A feature of the present movement is that shipments from the Texas City district have practically reached as high a level as those from the Port Arthur district.

If Texas City becomes the water outlet for the west Texas fields, shipments from that area can be expected to increase steadily from now on.

The following table shows estimated receipts of crude and refined oil by water at Atlantic Coast ports for March, 1927, February, 1927, and March, 1926 (figures in barrels):

	March, 1927	Feb., 1927	March, 1926
Baton Rouge and New Orleans	1,470,000	2,114,000	1,868,000
Port Arthur, Sabine and Beaumont	4,721,000	4,331,000	5,277,000
Texas City, Houston and Galveston	4,650,000	4,127,000	2,735,000
Gulf Coast	10,841,000	10,572,000	9,880,000
Pacific Coast	3,164,000	2,481,000	3,021,000
Mexico	1,148,000	1,121,000	4,720,000
South America	2,462,000	1,369,000	814,000
Total	17,615,000	15,543,000	18,435,000
Daily Averages			
Baton Rouge and New Orleans	47,000	74,000	61,000
Port Arthur, Sabine and Beaumont	149,000	155,000	168,000
Texas City, Houston and Galveston	149,000	150,000	88,000
Gulf Coast	345,000	379,000	317,000
Pacific Coast	103,000	89,000	97,000
Mexico	36,000	40,000	152,000
South America	81,000	48,000	26,000
Total	565,000	556,000	592,000

March receipts averaged more per day than those of February, which was a short month. In March, the total daily average receipts were 565,000 bbls., against 556,000 bbls. in February. This was due principally to an increase in imports from South America.

ARTESIA, N. MEXICO

(Continued from Page 51)

SE Section 17-16-27, shut down at 2,000 feet; Lackawanna Oil & Refining Co.'s No. 7, C NW SE, Section 21-18-28, shut down on top oil sand at 2,142 feet; Marland Oil Co.'s No. 1 Hale, Section 11-20-30, drilling at 1,050 feet; Manhattan Oil Co.'s No. 1 Cronin permit, SE NE, Section 1-18-27, drilling at 2,575 feet; Midwest Refining Co.'s No. 1 Terry, SW cor. NW, Section 5-18-26, drilling at 700 feet; Ohio Oil Co.'s No. 1 Marland, SW SW, Section 13-22-29, drilling at 2,550 feet; Prairie Oil & Gas Co.'s No. 1 Keel, SE SE, Section 10-17-31, pumping; Picher Oil & Gas Co.'s No. 4, NW cor. SE SE, Section 12-18-27, location; W. A. Stone Oil Co.'s No. 1 Hnulik, SW cor. NW NW, Section 25-17-26, drilling below 900 feet; Superior Oil Co.'s No. 1, SW NW, Section 33-23-28, moving material, Skelly Oil Co.'s No. 1 Lynch permit, Section 22-17-31, rigging up to resume drilling; Texas Production Co.'s No. 1 Robinson, NE SW, Section 25-16-31, spudding in; Mid-Continent Oil Co.'s No. 1 McIntyre, C SE, Section 21-17-30, fishing for lost casing.

Chaves County

Arena Oil Co.'s No. 1, SE Section 24-12-30, rigging up; Buffalo, Roswell Co.'s No. 1, Section 24-11-27, drilling below 4,040 feet; Delmar Oil Co.'s No. 1, Section 22-11-26, abandoned at 2,000 feet; Hall No. 1, NW Section 8-14-24, shut down at 1,580 feet; The Texas Company's No. 1 Dunken Dome, SW, Section 29-17-18, fishing for bailer in red sand at 3,400 feet.

Lea County

Cap Rock Oil & Gas Co.'s No. 1 Leonard & Levers, SE Section 11-16-32, drilling at 1,300 feet in salt topped at 1,011 feet; Covert No. 1, NE NE, Section 15-21-33, drilling in salt at 1,975 feet; Exploration company's No. 1, NE Section 25-19-35, fishing for tools; Henderson, Dexter, Blair, Inc.'s, No. 1 Wyatt, SW SW, Section 34-17-33, shut down at 4,700 feet, repairing rig; Ingelfield & Bridges' No. 1, Section 4-17-34, drilling at 4,760 feet, 4,000 feet oil in hole; Maljamar Oil & Gas Corp.'s No. 1 S. S. Beardsley permit, SW SW, Section 15-17-32, ready to spud; A. D. Morton's No. 1, SW SW, Section 28-11-38, location; Ohio Oil Co.'s No. 1 William Mitchell, NE cor. SW, Section 18-17-32, fishing for casing; Texas Production Co.'s No. 1 Jackson, SE cor. Section 4-20-34, rigging up; Texas Production Co.'s No. 1 Rhodes, NW Section 22-26-37, drilling at 100 feet.

This Is the Way They *Rode* . . . When JARECKI Was Established

Only twenty-two years had passed since the completion of the first American railroad [the Baltimore & Ohio running from Baltimore to Ellicott's Mills, Md.]; less than 30,000 miles of railroad served the United States as against 258,000 today; vast stretches of now prosperous land were still untouched by railroad rails—when Henry Jarecki established the JARECKI Manufacturing Company.

This year marks the seventy-fifth anniversary of that event. Seventy-five years of service; seventy-five years of uninterrupted growth! What better evidence that a strictly enforced policy of four-square honesty carries its own reward, what more eloquent proof of the soundness of serving the customer's needs, can be offered than this?

There is a store in your neighborhood ready to serve you in the same spirit that characterized the original store in 1852.

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Photograph shows installation of sixteen Cooper type-80 gas engines, all equipped with Champion Drop Forged connecting rods, in plant of Lone Star Gas Company.

Drop Forged Parts "Stand the Gaff"

IN the petroleum industry production equipment must keep going day-in and day-out in order to produce profits. The small operating margin will not permit "hit-and-miss" production caused by equipment that frequently breaks down and must be always nursed along.

You will find that the vital load-bearing parts of the best production equipment are drop forgings because they have the sturdy stamina to stand up under the punishment of relentless oil field service.

Champion Drop Forgings have load-bearing, strain-resisting ability in a proven and positive degree. Their tough, give-and-take strength—their sturdy ability to survive the brutal demands of oil field service is inherited from the steel of which they are made.

THE CHAMPION MACHINE & FORGING CO.
Cleveland, Ohio

CHAMPION DROP FORGINGS

CENTRAL WEST FIELDS

(Continued from Page 58)

top of the Berea, but it is not known how constant this interval may be within the limits of the Berea structure. The Rabe well, which is the second to be drilled on the farm, will drill down to the Saginaw formation.

The first Dundee sand well within the borders of the Berea Pool may reach that formation before the close of the week, according to an announcement by the owners, the J. & S. Development Co. It is No. 1, on the John Sliva property at Deindorfer and Charles Streets. This well had a small showing in the Berea sand and was dry in the Saginaw sand but at last report was down below 2,700 feet, expecting to tap the Dundee sand at around 2,900 feet.

Ohio Fuel Oil Corp. is sending its No. 4, on the Fisher farm, Section 10, Saginaw Township, down to the Saginaw sand. The Ohio Oil Co. is starting a well for the Saginaw sand on the A. Kuhl 30 acres, about 1,000 feet northwest of the Saginaw sand well on the Stelzreide farm, Section 11.

Fordney Petroleum Co. is starting a well on the W. J. Mason property, at the southwest corner of Clark and Hanchett Streets. Swink Oil Co. is drilling No. 1, near the foot of Tusola Street. Fordney Petroleum Co. is also getting in a rig for a well on the Oakland Vinegar & Pickle Co.'s property at the foot of Fitzhugh Street. Cavanaugh Oil Co. is drilling No. 1 on North Michigan Avenue south of Clark Street. Ohio Oil Co. is starting No. 1 at Oakley and Pleasants Streets. Arthur J. Benjamine, trustee, is starting a well on the Benjamine property at the corner of Michigan and Irving Avenues.

KENTUCKY-TENNESSEE

(Continued from Page 62)

this well has been delayed on account of flat hole.

Mississippi

Things are beginning to show some active development in the northeastern part of Mississippi, due to the finding of natural gas with a small show of oil. F. N. Henderson, who is following the development of the newer field, writes from Aberdeen, as follows: "The Mawk Oil Co. opened offices in Aberdeen a few days ago and has completed a derrick on the Seavey land in Section 22-15-7, Monroe County, and it is understood that if the block is completed near Becker for A. M. Sutton he will likely open offices also and begin operations at once. This will make four operating companies working out of Aberdeen. A crew of derrick builders from the Triangle Construction Co., of El Dorado, Ark., are completing the derrick on the Frank Rye land, Section 22-15-17 for the Brummitt Demontrond Interests and the Natural Gas & Fuel Corp. The Quincy Oil Co. is reported as in shale around 1,362 feet on its test on the Durrett land, Section 29-13-17. The Buffalo Oil & Gas Co. resumed operations with a roller bit on the Crook lease in Section 4-13-18 and is drilling below 664 feet. The Amory Petroleum Co. has a fishing job on the Hall lease in Section 8-13-17 at around 1,600 feet. The Nancy Carter Dill test of this company is changing over to cable tools. The Cumberland Oil Co.'s test in Webster County, in Section 15-21-11, is drilling below 350 feet in shale. The P. O. D. Co.'s test in Leake County, in the SE half of NE, Section 32-12-7, is reported close around 2,000 feet. The Graves and Jones Interests have started drilling on the Louis Kendall land, in Section 15-4-2, Simpson County."

This activity has been brought about by the completion last October of the Carter gas well which blew in at close around 5,000,000 feet, at a depth of 2,470 feet. It is the first commercial well located in southeastern United States, east of the Mississippi River and south of the producing fields of Kentucky and Tennessee. The significance of the discovery of commercial gas in a section of the Coastal Plain formed by Mississippi, part of Alabama, Georgia and Florida, long held potential for both oil and gas, far overshadows the amount of gas gauged in the Amory gasser or the fact that gas was discovered while the operators were in search of oil. The discovery of gas only confirms convictions long held by leaders in the oil industry that in the state of Mississippi and other sections east of the river from which the State derives its name, the finding of gas or oil would be but a matter of time. It has only required the Amory well to stimulate enough activity to finally place southeastern United States in the production column of the petroleum and natural gas industry.

Credit for the discovery of this commercial well on the Carter property, 9 miles east of Amory and 2 miles north of the town of Quincy on the Frisco, is due to the able management of Judge G. Gillespie, formerly of St. Louis, who heads the Amory Petroleum Co., an organization of Amory, Tupelo and Aberdeen capital which made the development possible.

Showings of Oil

After exhaustive field work by H. D. Easton, petroleum geologist of Shreveport, La., Judge Gillespie organized the Amory Petroleum Co., with a paid in capital of $30,000 needed to finance operations. Tests in the upper soft formation—the Tuscaloosa of the Cretaceous age—were made before the location was selected upon which the gas well was drilled. The well was drilled with a heavy string of standard cable tools consisting of 6-inch Parkersburg rig irons and actual operations started on February 15, 1926.

By welding collars, the 12½-inch drive pipe was driven 601 feet to the point where the hard rocks of the Palezoic age were encountered. Good showings of oil were picked up in bailing while drilling from 615 to 655 feet but conditions did not permit proper testing of these showings. However, the operators believe subsequent testing of these showings will result in commercial production of petroleum. The commercial gas was found before going entirely through the carboniferous beds, hence the Trenton limestones and all intervening horizons remain to be tested by deeper drilling. With structural conditions now proven by the presence of big production, deeper drilling looks most inviting. The gas well is now furnishing fuel for the new wells now drilling a few miles away and the time is short when it will be utilized by the citizens of the nearby towns. The gas from the well when first brought in burned a pure white flame but since its discovery it has turned to a reddish brown, indicating a tendency of the well to blow itself into an oil well, when the pressure dies down some.

Most of the territory within 30 miles of the well is now held under lease, much money having been spent in the securing of leases. The Texas Company, Ohio Oil Co., Gulf Refining Co., and others have stepped in and now control considerable acreage in the area surrounding the gas well.

According to H. D. Easton, the geologist who made the location, there are three factors causing the activity and the interest on the part of the major companies. First, it is recognized that commercial production is an established fact. Second, it is also recognized by operators who understand gas, that a 5,000,000-foot gas well in these Paleozoic rocks is easily the equivalent of 30,000,000 feet of gas in Louisiana or Arkansas because the hard formations give up their production more slowly, last longer, and are less disturbed by offset drilling. Third, most of the possible pay zones remain untested, but the present gas horizon and shallower depths.

Activity Around Amory

Walker Wood, Secretary of State of Mississippi, has this to say:

"Is there oil in Mississippi in paying quantities? This is a question that has brought about quite a difference of opinion. There are some citizens who believe there is as much oil in this state as hes been found in other states, like Oklahoma, Arkansas and Louisiana.

There are geologists who believe there is oil in the state and there are geologists who hold that we are 'bone dry' so far as oil is concerned. So far, most of the evidence is on the side of the 'dry' crowd, but those that believe there is oil in Mississippi have not given up hopes, and a determined effort is now being made in northeastern Mississippi to verify their opinion. The big gasser that was brought in recently at Amory has attracted the attention of the large oil operators throughout the country, and Mississippi in the northwestern part of the state is going to receive a real test. They have invested thousands and thousands of dollars in drilling machinery, and, if the drilling program that has been adopted is carried out, oil will be found if there is any in this section.

"If a real oil and gas field can be brought in in Mississippi during 1927, this would be a wonderful addition and would help materially Mississippi's upward and onward march. The oil operations around Amory are spreading. Leasing scouts are now leasing lands for the purpose of drilling for oil and gas, in Itawamba, Lee, Pontotoc, Lowndes, Chickasaw and Clay Counties.

"The companies back of these leasing campaigns should be given all assistance possible. Citizens in the territory mentioned have the land, but the average land owner has not the experience and money to drill oil wells. Most of the companies that want to lease the lands have the experience and the money to back putting down oil wells. If they want to test out the territory mentioned they should be given co-operation.

"In Mississippi a number of wells have been put down in the past few years, but oil in paying quantities has not been found, yet good showings of oil have been reported. Perhaps, the best test that has been made in the state was the Preston Oil Co.'s well, 6 miles east of Winona in Montgomery County, in the north-central portion of the State. These people came into the state and without any local assistance, drilled a well 4,000 feet. In this well it was reported oil sands were found, but they did not produce in paying quantities."

The above well was drilled by the Preston Oil Co. of Columbus, O., under the supervision of the well-known gas man, Preston Lupher, for years head of the Logan Gas Co.

EASTERN FIELDS

(Continued from Page 58)

Township, the Pure Oil Co. has completed in the same formation a test on the G. A. Young farm. It is a gasser good for 500,000 feet.

In Section 22, Alexander Township, Athens County, the Biddle Oil & Gas Co. has completed and shot in the Berea grit No. 7 on the John F. Biddle heirs' farm. It is not good for more than 7 bbls. a day. On the south side of Newark City, Newark Township, Licking County, W. W. & A. T. Wehrle have completed in the same formation a test on the William Vogelmier farm. It is a light gasser in the Clinton sand.

West Virginia

On Crooked Fork, Freemans Creek district, Lewis County, Krouse Brothers have completed in the fifth sand a test on their own farm. It is a small gasser. In Sherman district, Calhoun County, the Hope C. & R. Co. has drilled a test on the L. G. Garrett farm to the lower sands and dry.

In Center district, Gilmer County, the Carnegie Natural Gas Co. has a gasser in the Big Injun sand at a test on the James R. Rhoades farm. In Geary district, Roane County, the United Fuel Gas Co.'s second test on the G. W. Carper farm is a 5-bbl. pumper in the Big Injun sand.

Braxton County

In Otter district, Braxton County, H. C. Zogg & Co. have a gasser in the Big Injun sand at a test on the Lee Belknap farm. In the same district, the Philadelphia Co.'s test on the Melissa Rollyson farm and the Hope Natural Gas Co.'s test on the Cecil Gross farm are both dry in the fifth sand.

In Church district, Wetzel County, the Manufacturers Light & Heat Co.'s test on the J. Helmrick farm is a gasser in the Gordon sand. In Center district, Gilmer County, W. H. Satterfield & Co. have a gasser in the Maxon sand at a second test on the W. E. Maxwell farm.

In Henry district, Clay County, the Virginia Gasoline & Oil Co. has completed in the Big Injun sand a second test on the Mariah Brown farm. It is good for 5 bbls. a day. The location is 500 feet south of the first test. In the same district, A. G. Wornock and others have a rig up on the W. H. O'Dell farm, 1,400 feet west of the Empire Petroleum Co.'s test on the J. W. Samples farm. In the same district, the Chalmers Oil & Gas Co. has a rig up on the W. D. Samples farm.

Calhoun County

On Road Run, Sherman district, Calhoun County, the White Pine Oil & Gas Co.'s test on the Francs-Gainer farm is a gasser in the Big Injun sand. It is very light. On Yellow Creek, Sheridan district, the Chemical Oil & Gas Co. has the rig completed for a test on the Snyder & Co. farm.

On Indian Creek, Ten Mile district, Harrison County, Dr. Ritter and others have a rig up for a test on the M. E. Ritter farm. In Jefferson district, Lincoln County, the Cambridge Gas Co.'s test on the E. J. Elkins farm is a light gasser in the Berea grit.

In Courthouse district, Lewis County, Guy Zinn & Co. have drilled a test on the M. J. Cunningham farm through the Big Injun sand. It is a light gasser. In Grant district, Pleasants County, George Pickens & Co.'s No. 5 on the William Hammett heirs' farm is good for 10 bbls. a day in the Keener sand.

In Mannington district, Marion County, S. N. Elliott has a fifth sand gasser at a second test on the L. R. Metz farm. In Coal district, Harrison County, the Clarksburg Light & Heat Co. has a gasser in the Big Injun sand at No. 251 on the S. D. Gore farm.

Drilling Test Wells

In Geary district, Roane County, the Morley Oil & Gas Co. has a rig up on the Sargent School lot. In PawPaw districts, Marion County, the Owens Bottle & Machine Co. is due in the sand on the M. L. Straight farm. In the same district, the Hope Natural Gas Co. is fishing for a string of tools on the Rebecca Tennent farm. In Battelle district, Magnolia County, Tennant Brothers are due in the sand on the Elvira Core farm.

In Mannington district, Marion County, Monroe & Laughlin are drilling down No. 1 on the R. A. Moffit farm. The Manufacturers Light & Heat Co. has started to drill on the Henry Ahouse farm. In West Union district, the same company is drilling on the U. G. Summers farm. In Murphy district, Ritchie County, Ira Haught and others are rigging up on the W. M. Nutter farm. In Center district, Gilmer County, Okey Bennett is due in the sand on the James P. Shock farm.

On McFarlan creek, Murphy district, Ritchie County, the Hope Natural Gas Co. has spudded in a test on the Noah Jordan farm. In McElroy district, the Hope Construction & Refining Co. has a rig up on the Raleigh Grey farm. In the same district, the Manufacturers Light & Heat Co. is rigging up on the S. N. Lemasters farm. The American Oil & Development Co. has made a location on the A. G. Smith farm. In Liberty district, Marshall County, the Carnegie Natural Gas Co. has started to drill on the S. N. Cole farm. The Hope Natural Gas Co. is hauling rig timbers to a location on the I. G. Logsdon farm.

Southwest Pennsylvania

In Richhill Township, Greene County, the Natural Gas Co. of West Virginia has completed No. 6 on the H. S. & C. M. Smith farm. It is showing for a 15-bbl. pumper in the Big Injun sand. In Wayne Township, The Manufacturers Light & Heat Co.'s test on the Simon Yost farm is a gasser in the fifth sand. In Morris Township, the Consumers Fuel Co.'s No. 3 on the Alfred Rutan farm is showing for a very light pumper in the Gordon sand.

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For dependability under all conditions they are unsurpassed.

B & A Safety Rod Hook

Is absolutely safe. The weight of the elevator CLOSES and LOCKS it AUTOMATICALLY. Locked it positively CANNOT OPEN until released by hand pressure on the handle, which is protected from opening by accidental contact.

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Safety latches, one above the other and acting from opposite sides entirely close opening making it impossible for rods to twist out if hook does not swivel.

Underslung and balanced, making rods hang straight, preventing kinked rods. Wearing parts dovetailed into body and easily renewed. Made in any size for any kind of rods. All wearing parts interchangeable.

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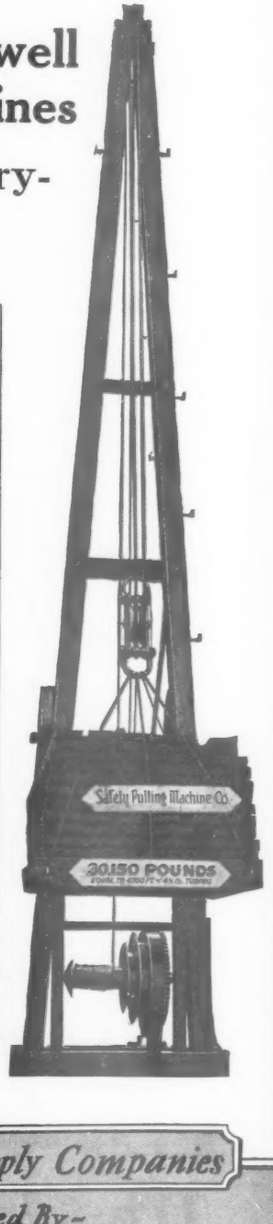

Specifications

DEEPWELL

Eclipse Deepwell up to 8000 ft. 2" Tubing, Weight 3645

Mast 8x10x36 ft., Douglass Fir A-Style Two Wheel Truck, two 16" Bronze bearing crown pulleys, 2½ Steel Pin mounted in malleable boxings. Large supporting plate 16" dia. between crown pulleys, eliminating any chance of bending pin.

Reel or Drum; 32 lb. 8¼ casing filled with concrete for winding drum, differentials banded with 3/16 band iron, brake surface 6"x40", choke brake style same as Star drilling machine.

The whole reel assembly is mounted on 2¾ square steel shaft extending clear through reel, secured by three heavy castings.

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Manufactured By—

SAFETY PULLING MACHINE CO.

INDEPENDENCE, KANSAS

PIPE LINE POWER AND FUEL PROBLEMS; INITIAL AND MAINTENANCE COSTS

By S. P. Young*
Sinclair Pipe Line Co.

As practically all of you know, power for moving crude oil through a main pipe line system is obtained from a chain of pumping stations spaced along the line at intervals of about 40 miles.

At each of these stations, which, by the way, are permanent installations, there are usually a number of Diesel engines direct-connected to duplex or triplex reciprocating pumps which pump the crude oil at from 600 to 800 pounds pressure through the line to the next distant station, thus relaying the oil from station to station, until it finally reaches its destination at the refinery or seaport.

Power and Fuel Problem of Importance

The problem of using the proper power and also of using the best fuel to produce that power at the pumping stations is of the utmost importance and is in the final analysis of an economic nature. In fact we have two problems to solve as a pipe line system beside the main line pumping stations has numerous gathering pump stations in the oil fields.

The gathering stations take the oil produced in the field and pump it into the main trunk line system just described. They often have to be constructed in the shortest possible time, are usually of a temporary nature and therefore offer a different problem than that of the main line stations.

Gather stations ordinarily have used Diesel or semi-Diesel engines as power to drive reciprocating pumps. However, electric motors are also coming into use as a means of obtaining power to drive reciprocating pumps in gathering stations so this interesting development will also be discussed from an economic standpoint.

Another recent development is the use of motor-driven centrifugal pumps inserted in the line midway between the existing pump stations. This installation promises to increase the capacity of an existing pipe line at less cost than it would take to loop the line, in cases where temporary additional capacity is needed. It is not believed, however, to be as economical as looping the line if permanent additional capacity is desired.

Fuel Economy Determines Use

To secure the greatest economy of operation of our main line pump stations present pipe line practice has turned from steam-driven pumping machinery to the use of the Diesel oil engine as a source of pumping power. This is on account of the fuel economy of this type of engine, as it consumes at full load under ideal conditions .45 pounds of fuel or crude oil of about 18,500 B.t.u. per pound per brake horsepower hour for the sizes of engines usually used in pipe line practice. Actual monthly averages obtained from Diesel engines operating in main line pump stations show a range of from .44 to .55 pounds of fuel used per brake horsepower hour. The high figure is usually due to operation of the Diesel engine or engines on light loads when the demand from the refineries for crude slackens. The efficiency curve of the Diesel engine is practically level from full load down to about 75 per cent, then it drops off some as the load is further decreased.

The Diesel engine is so much more economical in the use of fuel than the steam-driven pump fed by either the coal or oil-burning boiler that even though the installation cost or total initial investment is somewhat higher than the steam-driven pumping machinery, still the total annual cost of operating a Diesel plant, including interest on investment, depreciation, obsolescence, labor, repairs and fuel is enough lower than that of a steam plant to justify its general use in pipe line work, and practically all recent pipe line installations use Diesel engine power.

Where Steam Is Used

There are, of course, special conditions where steam is still in use. For instance, many steam-driven pipe line pumping plants were erected before the Diesel engine was perfected as a reliable source of power, and it would not pay to go to the considerable expense to convert these plants to Diesel power as the additional fixed charges incurred by converting steam to Diesel power would in most instances result in higher annual total cost of operation than they are now subject to. Also when pumping heavy crude oil, which, due to high viscosity, has to be continuously heated throughout the year as in the case of some California and Mexican crudes, it is more economical to use steam pumping equipment. The reason for this is that exhaust steam is available for heating the oil to reduce its viscosity, thereby making it more fluid and less difficult to pump.

If Diesel power were used here, it would also be necessary to install an auxiliary steam heating plant to heat the oil. This would result in higher total annual costs per barrel pumped than for the steam plant.

The question might be asked why not install steam instead of Diesel engine pumping equipment on main trunk lines pumping high gravity crude of high viscosity or paraffin content, such as is produced in the Amarillo or Wyoming fields. Some of these oils congeal at about 50 degrees Fahrenheit and such high pressures are sometimes encountered in pumping these oils that it is sometimes necessary to heat the oil.

Pipe lines, however, have installed and are now installing Diesel pumping equipment in their main trunk line stations on lines out of these fields. The reason is that it is only necessary to heat the oil during a few winter months and possibly not even then, as by experience it has been found that by moving the oil by turbulent flow and keeping it moving continuously, heating is not always necessary, and although the full capacity of the line would not be maintained by pumping the oil cold, it is more economical to lose the pipe line tariff on the decreased amount of crude pumped than to pay the extra fuel expense of heating to get full pumping capacity.

Fuel Oil Versus Crude Oil

As to the fuel supply for the Diesel engines in main line stations, there is the choice of using the crude oil taken directly from the pipe line system or of using fuel oil shipped from the nearest refinery.

This is another question of economics, depending on the market conditions of crude and fuel oil. For instance, around January 1, 1927, 22 to 26 gravity fuel oil could be laid down at a certain main pipe line pumping station for approximately $1.73 a barrel including freight and handling. At that same time if the 37 gravity crude oil, taken from the pipe line system, had been used the crude oil would have cost $2.37 a barrel. It is evident that in this case it was more economical to use fuel oil. (Note—Diesel engines in actual Mid-Continent practice have approximately the same fuel consumption using fuel oil of 22 to 26 gravity and crude oil of the gravities as usually produced in Oklahoma and Kansas, the difference, if any, being slightly in favor of the fuel oil.)

At the present time (March 15, 1927), 22 to 26-degree gravity fuel oil costs $1.65 laid down at this same pumping station while 37-degree gravity crude is worth only $1.30. Consequently it is now more economical to use crude instead of fuel oil at this particular station. The above procedure has to be figured out separately for each pump station as some are located so far away from a source of fuel oil supply that the freight rate would make the cost of the delivered fuel

*Before Mid-Continent section of the A. S. M. E. at Tulsa, Okla., April 7.

oil higher than that of the crude in the line even when crude is relatively high and fuel oil low in cost. To obtain the lowest or best fuel economy the changes in the market prices of crude and fuel oil have to be watched closely, switching from crude to fuel oil and vice versa as the case may be.

Desirable and Undesirable Properties

Diesel engines are designed to operate efficiently and reliably on either crude or fuel oil of practically any gravities from 20 to 40 degrees. Crude taken from the Mid-Continent pipe line systems for fuel has the characteristics of oils produced in Oklahoma, Kansas and North Texas. This type of fuel has proved satisfactory for use in Diesel engines. Pipe lines using it as fuel only have to make sure the b.s., fine sand, grit, etc., is drained and strained out of it before using it as Diesel fuel. Fuel strainers on the fuel line to the engine and drains on the fuel storage tank are used to take out of the fuel oil any foreign matter of water that has not settled out in transit.

In considering this problem of the proper fuel to use on the Diesel engine, regardless of whether it be crude or fuel oil, as a general rule no heavier oils should be used than those which can be burned with a smokeless exhaust. A smoky exhaust means improper fuel combustion and results in leaky and possibly sticking exhaust valves. It also increases fuel consumption.

Oils of from 20 to 40-degree gravity are very desirable as far as fluidity is concerned, but oils lighter than this do not contain as many heat units per gallon, and it would be uneconomical to use them as the cost per gallon is also higher for the higher gravity oils.

Separating Impurities

As we have already said, fine sand, grit and also b.s. and water should be removed from the fuel before it enters the fuel pump of the Diesel engine.

B.s. clogs the fuel valves of the engine and causes many other troubles, while fine sand and grit cause rapid cylinder wear and leaky fuel and fuel pump valves.

A great deal of the b.s. and water can be separated at the fuel storage tank by having the fuel outlet at some distance above the bottom allowing the tank settlings to be drained off. The remainder of the fine sand, grit, etc., held in suspension is removed by passing it through a filter or strainer on the fuel line between the storage tank and the fuel pump. This filter is of the twin or triple type so one part can be cleaned while the others are in operation. Such a filter should be regularly cleaned and well taken care of, otherwise it will clog up or allow the impurities to pass through causing the fuel pump and fuel valves to wear and leak and also causing rapid cylinder wear and fuel valve trouble.

Another impurity in the fuel which causes trouble is sulphur. This often forms sulphuric acid which has a corrosive effect on the exhaust valves and piping. Consulting Diesel engineers state that this corrosive action takes place after the engine is shut down as the sulphur gases in the exhaust form sulphuric acid with the condensed moisture from the exhaust after the engine being shut down has cooled off and then get in their corrosive action. Their remedy is to change over just before shutting the engine down from the regular high sulphur content fuel to a special low sulphur grade of fuel. This would expel the sulphur gases from the exhaust before the engine was shut down. They also state it is advisable to start on a high-grade fuel and then switch to the main source of fuel supply.

Corrosive Action

In actual pipe line practice it has been found that there is corrosive action on the exhaust valves and piping and also on the fuel pump and fuel valves and seats which takes place not only when the engine is shut down but also when it is running on a fuel with a relatively high sulphur content.

This corrosive action can be greatly retarded by using stainless steel fuel pump valves with Tobin bronze seats. Fuel pump plungers of a rust resisting material and cast iron fuel needles are also used, as these materials resist corrosion better than steel.

A high residue content is undesirable. By residue is meant that which remains after the oil has been heated in a closed oven for 120 hours at 575 degrees Fahrenheit. This is a very important feature as an excess of residue will result in high cylinder wear.

The ash content is the most detrimental remnant of the combustion of fuel oil in Diesel engines, as an excess of it causes excessive wear of cylinders and exhaust valves. This is because the ash is usually composed of mineral matters such as quartz and silicates, or oxides of iron and aluminum, which, mixing with the film of lubricating oil, adhere to the cylinder walls, accumulate, to cause excessive wear.

To sum up the characteristics of a desirable fuel for Diesel engines, the following specifications are suggested:

Specification for Diesel Engine Fuel Oil

1. The fuel oil shall be free from acid, grit, fibrous material or any foreign matter which is liable to damage the engine mechanism or clog the fuel valves.

2. Gravity of the fuel oil shall be from 22 to 30 degrees A. P. I. at 60 degrees Fahrenheit.

3. Flashpoint may range from 125 to 250 degrees Fahrenheit (Pensky-Marten closed tester).

4. Burning point may range from 160 to 300 degrees Fahrenheit.

5. Heating value shall be 18,500 B.t.u. or better per pound of fuel oil.

6. The sulphur content shall not exceed 1 per cent.

7. The water content shall not exceed 0.3 of 1 per cent.

8. The ash content shall not be greater than 0.1 of 1 per cent.

9. The residue after heating in a closed oven for 120 hours at 575 degrees Fahrenheit shall not be over 10 per cent.

10. The viscosity should not be greater than 3,000 Saybolt seconds at 40 degrees Fahrenheit.

11. The volume of fuel oil shall be determined on the basis of 42 gallons per barrel, 231 cubic inches per gallon, at 60 degrees Fahrenheit. For a volume correction at different temperature the National Standard Petroleum Oil Tables shall be used.

Electric Versus Diesel Power

The rapid extension of electric transmission lines in the oil fields and the gradual decrease in electric power rates have forced the issue of electric power on the oil industry and given us another very interesting problem.

With the pipe line company the question is shall it take advantage of the availability of electric power and install electric motors instead of Diesel engines. This is an economic problem.

The answer at the present stage of electric power development is that for permanent installations at main trunk line pumping stations the Diesel engine direct-connected to a reciprocating pump is more economical than the electric motor direct or belt-connected to a reciprocating pump. This is because the fuel cost for the Diesel engine installation is less than one-fourth of the cost of electric power which more than offsets the higher fixed charges of the Diesel engine installation.

However, due to the lower installation cost of the electric pumping station, it is more economical to make use of a motor installation for a temporary gathering station in a flush field than to use the Diesel station. The period of flush production of such a field is usually of from three months to one year's duration. It will now be shown by some figures that where an oil pumping installation is to be used for less than approximately three and one-half years, it is more eco-

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Valdura Asphalt Paint

is the result of over 30 years' experience. Every single item that affects the finished product is precisely right. Genuine 99.5% pure Gilsonite Natural Asphalt is the base, and this is compounded with equally high-grade materials—the best obtainable.

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The Right Oil

In The Right Place

Keeping down the friction load and reducing friction wear to a minimum, is the problem of every operator of machinery. And there is but one solution to the problem—using the right oil in the right place.

The nature of the oils needed for the proper lubrication of bearings differs as widely as bearings do—in their type, their operating speeds and temperatures, the weight they carry at normal and peak loads, the frequency of their starting and stopping, and the method by which the oil is applied to the bearing surfaces.

All of these points have been carefully studied by our engineers, and Humble Zero Cold Test Oils have been scientifically prepared to meet certain operating conditions. Each Humble Oil is just right for the place that we recommend its use—you may depend on that—whether it be in your plant or in your automobile.

The Humble Oil & Refining Company is a large user of both heavy and light equipment of various kinds, and our lubricating engineers have made exhaustive tests on our own equipment, the results of which are offered to all users of lubricating oils.

And if you are having trouble with the lubrication of any particular bearing in your plant, our engineers will be glad to study your problem and furnish you with an oil that will solve it. Just ask us.

Reg. U. S. HUMBLE OIL & REFINING CO. HUMBLE OILS HOUSTON, TEXAS *Pat. Off.*

Humble Oil & Refining Co.
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nomical to install an electric station, provided, of course, there is current available at a reasonable rate and that where the installation is to have a life of more than three and one-half years it is more economical to use the Diesel engine installation.

COMPARATIVE COSTS OF DIESEL AND ELECTRIC POWER

Actual Installation Cost of 475-h.p. Diesel Station (Consisting of Three 75-h.p. and One 250-h.p. Unit and Suction Pumps)

(This does not include manifolds and fields lines, stock tanks, warehouse cottages, cost of station site, etc.)

Pump station buildings		$ 13,965.70
Machinery	$ 59,099.36	
Machinery foundations	9,160.62	
Machinery installations	6,110.00	
Total machinery (includes all auxiliary equipment inside station building)		$ 74,369.98
Auxiliary equipment, outside (station building, water tank, reservoir and water lines, fuel lines and tank, lub oil lines)		$ 7,547.42
Total cost		$ 95,883.11

Same for 495-h.p. Electrically-Driven Station of Six 75-h.p. Motor-Driven Units and Three 15-h.p. Motor-Driven Suction Pump Units

Pump station buildings		$ 9,563.00
Machinery	$ 22,623.60	
Machinery foundations	2,611.03	
Machinery installations	3,220.52	
Total machinery	$ 28,455.15	
Total cost		$ 38,018.15

COMPARATIVE ANNUAL COST OF OPERATION

Pumping 24,000 bbls. of crude oil per 24 hours at 600 pounds pressure, average total load, 280 brake horsepower. One 75-h.p. unit held as a spare.

For 475-h.p. Diesel Station

Interest and depreciation at 15 per cent	$ 14,392.47
Machinery maintenance, at $4 per installed horsepower	1,900.00
Labor (same station crew as at electric station so will not affect result).	
Cost of fuel—	
(a) When fuel is crude at $2.37 per barrel	$ 10,071.23
(b) When fuel is crude at $1.30 per barrel	5,525.00
(c) Average	$ 7,798.12
Total annual charges (less labor)—	
(a) For fuel at $2.37 per barrel	$ 26,363.70
(b) For fuel at $1.30 per barrel	21,817.47
(c) Average total annual charges	$ 24,090.59

Same for 495-h.p. Electric Station

Interest and depreciation at 15 per cent	$ 5,702.73
Machinery maintenance, at $1 per installed horsepower	495.00
Labor (same as for Diesel station).	
Cost of electric power (averages close to 1.4 cent a kilowatt hour)	$ 34,749.00
Total annual charges	$ 40,946.73
Difference in annual operating costs in favor of Diesel station	$ 16,856.14

TO RECAPITULATE

Investment in Diesel station	$ 95,883.11
Investment in electric station	$38,018.15
Difference in favor of electric station	$ 57,864.96

$\frac{57,864.96}{16,856.14}$ = 3.44 years or 41 months.

Thus it will take 3.44 years, or 41 months, of operation for the Diesel station to catch up and pass economically the electric motor-driven station. Diesel power is therefore more economical for main line stations and electric power more economical for temporary gathering stations.

Gathering Stations

An important advantage of the electric gathering station is that it can be installed and put into operation in less time than the Diesel station. This is due to the smaller machinery foundations required, less time needed to line up and erect the motors, absence of auxiliary machinery, water, fuel tanks and lines, etc.

The time element is an important commercial advantage in a new field for the first pipe line to start pumping oil gets the first customers and usually when the field plays out is found to be the last pipe line to be holding them.

The fact of being the first to get the business is often sufficient advantage to justify electric installation even if there were no other economic advantage involved.

A third advantage of the electric installation is that there is less money left in the ground in the form of concrete machinery foundations, reservoir, etc., after the field production has declined and the station has been dismantled. In other words, there is a greater percentage of salvage value available.

Another instance in which an electric installation is good economy is in an old field of settled production where the amount of oil pumped is small. In many cases of this kind a small electric motor belt connected to a pump cannot only be installed for less expense than a Diesel pumping unit but can also be operated at less expense, as the field gauger can operate the electric station, leaving it running while he makes his field runs. On the other hand, he would have to stay with the Diesel plant while it was running and not enough time in a day would be left to make his field runs, necessitating the employment of an extra man as a pumper. This lower labor charge for the electric installation makes it the more economical of the two.

CONFERENCE ON SALES IN MILWAUKEE OFFICE

The Milwaukee branch office of the Bolene Refining Co. of Enid, Okla., were hosts to approximately 100 gasoline service station superintendents and salesmen at a dinner meeting held March 28 in the Medford Hotel, Milwaukee.

The purpose of the meeting was to outline the company's local merchandising and advertising campaign, which will continue through the next few months. The results of the test campaign in the Milwaukee territory will help to determine the policies of the company in other sections of the country.

Speakers at the meeting included T. W. Eason, advertising manager of the Bolene company, chairman; I. R. Smith, state salesman, who spoke on "Crude Oil and Refining Processes"; H. A. Waterbury, Koch Advertising Co., who presented the plan for the advertising campaign; R. H. Rowland, refinery representative, who reviewed the technical features of the new Bolene "Blue Seal" gasoline; J. A. Gilmore, American Oil Men's Association, who spoke on "Organization"; G. C. DeHeus, Koch Advertising Co., whose subject was "Increasing Unit of Sale," and William Ourme, Vacuum Oil Co., who dealt with "Merchandising Service Stations."

After the speaking program, there was an hour of open discussion, in which the dealers brought up current problems of merchandising gasoline and oil.

ELI ADMIRE A SUICIDE

Eli Admire, editor of the Oilton, Okla., Gusher, and known to many oil men who operated in the Cushing-Shamrock oil field, committed suicide on Tuesday by shooting himself in the head. Admire was defeated in Tuesday's election for the office of city treasurer of Oilton and took his life 30 minutes after the result was announced. He was 55 years of age.

FRANK PHILLIPS' LATEST GIFT

Frank Phillips, president of the Phillips Petroleum Co., and a resident of Bartlesville, Okla., has announced an unconditional gift of $12,500 to the Bartlesville public library in appreciation of the action of Bartlesville voters in having passed a bond issue for the support of the library.

PROGRAM FOR CINCINNATI MEETING OF THE NATURAL GAS ASSOCIATION

MONDAY, MAY 9 (Eastern Standard Time)

9:30 a. m. Opening of exhibition by Natural Gas Supply Men, Inc., in both wings of Music Hall Buildings, Elm Street. The Appliance Hall will be open to the public from 2 p. m. to 10:30 p. m. daily, except Monday, May 9.

10 a. m. Meeting of the Technical and Research Committee and sub-committees, Hotel Sinton.

12 Noon. Luncheon will be served in rear of Machinery Hall adjoining Auditorium, free to all members wearing badges and holding luncheon tickets, obtainable Monday, Tuesday and Wednesday at Registration Booth in foyer of Auditorium. Compliments of Natural Gas Supply Men, Inc.

2 p. m. Annual meeting, Natural Gas Supply Men, Inc., in Auditorium.

4:30 p. m. Annual meeting, board of directors of the Natural Gas Association of America, Hotel Sinton.

6:30 p. m. Annual dinner, board of directors of the Natural Gas Association of America, Hotel Sinton.

8:30 p. m. Vaudeville and smoker, Roof Garden of Hotel Gibson. A free ticket will be handed to each member at the registration booth when registering. Compliments of Natural Gas Supply Men, Inc.

TUESDAY, MAY 10

9:30 a. m. Meeting of the Natural Gas Association of America, Auditorium of Music Hall. Presiding, R. W. Gallagher, president; N. C. McGowen, vice president.

Call to order. Invocation: Rev. Albert Neilson Slayton, rector, Calvary Episcopal Church, Clifton, Cincinnati.

Address of Welcome: Hon. Murray Seasongood, mayor of Cincinnati.

Response: L. K. Langdon, Esq., The Union Gas & Electric Co., Cincinnati.

Address of the President: R. W. Gallagher, president, The East Ohio Gas Co., Cleveland, Ohio.

Appointment of committee on president's address, by N. C. McGowen, vice president.

Report of Memorials Committee: James H. Dye, chairman, Pure Oil Co., Charleston, W. Va.

Paper: "Education of Employes"—P. G. Vondersmith, Union Gas & Electric Co., Cincinnati, Ohio. Discussion.

Paper: "Laboratory Developments of Interest to the Natural Gas Industry"—R. M. Conner, director, Testing Laboratory of American Gas Association, Cleveland, Ohio. Discussion.

Luncheon will be served immediately after the meeting in Machinery Hall adjoining the Auditorium. Secure tickets at registration desk.

2 p. m. Report of Wrinkle Committee: W. Re. Brown, chairman, editor, "Natural Gas," Pittsburgh, Pa.

Paper: "Selling Gas and Gas Appliances for Domestic Purposes"—George E. Whitwell, Equitable Gas Co., Pittsburgh, Pa. Discussion.

Paper: "Some Aspects of Natural Gas Rates"—John E. Mullin, Esq., Kane, Pa. Discussion.

Paper: "Selling Gas for Commercial and Small Industrial Uses"—Harry O. Loebell, Surface Combustion Co., New York City. Discussion.

8 p. m. Special night meeting in Auditorium of Music Hall, President R. W. Gallagher, presiding.

Program:

Musical selection.

Address, Doctor Condon, superintendent Cincinnati public schools.

Essay by winner of the Junior Contest on the "Story of Natural Gas."

Musical selection.

Address by Dr. Herman Schneider, dean of the College of Engineering, University of Cincinnati.

Essay by winner of the Senior Contest on the "Story of Natural Gas."

Musical selection.

Address by Phillip G. Gossler, president, Columbia Gas & Electric Corp.

Moving pictures, "The Story of Natural Gas."

WEDNESDAY, MAY 11

9:30 a. m. Report of Publicity Committee: H. J. Hoover, chairman, Cincinnati, Ohio.

Paper: "Meeting the Natural Gas Problems of the Southwest"—N. C. McGowen, Louisiana Gas Co., Shreveport, La. Discussion.

Question discussion—

The remainder of the day will be devoted to discussion of the following questions, with J. D. Creveling, of Henry L. Doherty & Co., New York, acting as chairman:

1. What effective methods do you recommend for reducing distribution system leakage?
2. What practical methods would you use for determining transmission system leakage?
3. What is the practical range for intermediate and low pressure regulators?
4. What practical methods are being used for controlling deliveries from high-pressure wells?
5. What method do you regard as most effective in gaining the good will of the consumer?
6. What new methods have been developed for removing fluids from gas pipe lines?
7. What is the value to gas companies of Home Service Departments?
8. How should gas companies promote safety among their employes?
9. What are the new developments in gas meters?
10. What are the practical applications on welding of natural gas lines—field, transmission and distribution?

The annual picture of the convention will be taken immediately after the adjournment of the morning session, followed by the usual luncheon.

2 p. m. Resumption of the Question Discussion.

6:30 p. m. Twenty-second annual banquet, Roof Garden of Hotel Gibson. Toastmaster, W. W. Freeman, vice president, Columbia Gas & Electric Corp., New York.

Speakers—

C. J. Hicks, New York City.
Dr. John L. Davis, New York City.
And one other to be announced later.

THURSDAY, MAY 12

9:30 a. m. Report of treasurer.

Paper: "The Use of Gas and Air in Oil Recovery"—Frank M. Brewster, Petroleum Reclamation Co., Bradford, Pa. Discussion.

Reports—

Technical and Research Committee, H. C. Cooper, chairman, Pittsburgh, Pa.

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Committee on Gas Measurements, F. M. Towl, chairman, New York City.
Committee on Gas Utilization, E. D. Leland, chairman, Pittsburgh, Pa.
Committee on Gas Transportation, H. D. Hancock, chairman, Kansas City, Mo.
Committee on President's Address.
Committee on place of meeting.
Committee on nominations.

Election of officers and directors.

Report of Committee on Final Resolutions.

Adjournment.

2 p. m. An inspection tour of the electric generating plant of the Columbia Power Co., at Columbia Park, one hour's ride from Cincinnati, will gladly be arranged if sufficient interest is manifested. Members will please express their wishes, when registering, on cards provided for the purpose.

COAL STRIKE NOT AFFECTING STEEL; OPERATORS RUNNING 95 PER CENT

By B. E. V. Luty

PITTSBURGH, Pa., Apr. 11.—Production of steel in March was approximately the same as in March a year ago, when production was the highest on record with 4,488,362 gross tons of ingots made, representing 92.58 per cent of assumed capacity. The official report on last month's production will be out in a few days. However, as a few per cent extra production of ingots occurred as an additional precaution against coal strike eventualities, current consumption of steel is not indicated to be altogether up to the rate of a year ago.

At no time has it appeared probable that the coal strike, which began April 1, would seriously interfere with steel production or even raise the price of coal greatly. Coal strikes, to amount to anything, last several months and developments early in a strike are not necessarily indicative of the general course or outcome. However, it may be said that thus far the strike is proving milder than was commonly expected. In West Virginia there has been approximately as much striking as was expected. In the Connellsville coke region there has been none at all, though it should be remembered Connellsville operators expected their trouble, if any, in May or June rather than at the outset. In the Pittsburgh district with the open shop operation of the Pittsburgh Coal Co., there was about 10 per cent decrease in the number of men working from the number in the week before the strike, but since then the number of men has been increasing, at this writing exceeding the number just before the strike.

Operations Increase Slightly

The strike has had no visible influence upon the steel market, although it is possible that consumers and jobbers have been buying a little more freely than would otherwise have been the case.

Steel mill operations increased somewhat during March and since then there has been no discernible swing in either direction. Production is at close to 95 per cent capacity.

Pipe mills are having a fair operation, variously estimated at 75 to 85 per cent, the lower figure being probably nearer the fact. There has been no material change in the rate of operation in the past few weeks. This is contrary to the usual seasonal swing, which normally would be upward at this time. Demand for casing and other well material has been increasing somewhat, quite as much as should be expected from the drilling prospects, and much less than was the case a year ago, when the pipe trade was swinging into by far the busiest summer it ever had.

No line pipe business of consequence is reported in the week, but mills are well filled with line pipe business at the moment, and some of the orders will last for several months.

Demand for standard or merchant pipe is increasing with the progress of the season and is approximately the same as a year ago, when it was not particularly heavy relative to butt weld capacity, mills not reaching an entirely full operation of butt weld furnaces.

Pipe Prices Firm

Prices at pipe mills are perfectly firm in all departments, and no irregularities are reported in the secondary market.

According to precedent the general swing in steel demand and production should be downward henceforth, and into July. Last year the drop in production from March to July was 15 per cent, while afterwards there was a partial recovery.

Finished steel prices in general are holding quite well, but they show no definite stiffening in any quarter and it is not entirely improbable that some further slight declines may occur. Competition for orders has been so keen for more than two years that sellers are hardened against taking the price cutting route and it is only occasionally that an accident occurs.

The valley pig iron market continues dull and in all pig iron markets are rather dull. Due to the withdrawal of steel producers as sellers of merchant iron, basic pig iron in the valleys has had two 50-cent advances in the past 30 days, being now at $19, with little demand. Foundry and Bessemer remain at $18.50 and $19.50 respectively, f. o. b. valley furnaces.

Connellsville coke is dull and unchanged, with spot at $3.25 to $3.50 for furnace and $4.50 to $5.00 for foundry.

MARK E. DAVIS DIES AFTER SHORT ILLNESS

Mark E. Davis, age 55 years, a member of the firm of Heggem & Davis, oil producers, and one of the organizers and owners of the Oil Fields Improvement Co., died late Tuesday at his home in Tulsa, after an illness of three weeks. His sister, Mrs. S. T. Orth, survives him.

Mark E. Davis was born near Youngstown, Ohio. He received his education in Youngstown and was in business there afterward. In 1922 he came to Tulsa and two years later he and Alf G. Heggem entered the oil field supply business by organizing the company above named.

Mr. Davis was a member of the Tulsa Country Club and the Tulsa Club. He was a liberal and frequent contributor to the Tulsa Boys' Home, and his numerous philanthropies included the education of children who were handicapped by poverty or physical disability and the granting of scholarships to several Tulsa High School graduates. He had a wide acquaintenance in the oil business and was highly esteemed.

GOLD SERVICE BUTTONS FOR INDIANA EMPLOYES

Five members of the Decatur, Ill., division of the Standard Oil Co. of Indiana received gold service buttons last week in recognition of 10 and 20 years of service with the company. G. F. Phillips, assistant manager of the division, received a button for 10 years' continuous service.

Other employes decorated were : Lawrence Hanna, chief clerk, who received a 20-year button; Oscar Martin, sales promotion department, who had earned a 10-year button; Harry Nalefski, check department, received a 10-year button; and John Kerr, order department, was given a 10-year button.

CALIFORNIA FIELDS

(Continued from Page 56)

wells below the 4,000-foot level and 19 below 3,000 feet. Fifteen more are rotating ahead between surface and 1,000 feet, 16 between 1,000 and 2,000 feet, and 25 making hole between 2,000 and 3,000 feet. In addition to those wells already under way, 22 new rigs have been erected, about half of which are completing preliminary rigging operations.

Drilling Operations

Drilling operations in the older section of the field are progressing very satisfactorily, although, of course, neither the Associated, Marland nor Standard is pushing work ahead very fast. The Associated has just finished drilling No. 4 Bryant in the eastern part of the field and the oil string will be run in tomorrow. This well has been carried down to 4,560 feet and the 8⅝-inch has been landed and cemented at 4,320 feet. On the Hellman property the Associated has two active drilling projects, one of which, No. 3, has been showing some fairly promising indications at 3,150 feet. The Marland's drilling operations in the older section are concentrated on the Bixby property where the company has four drillers, three of which should be completed within two or three weeks. The Standard's next producer in this area should be No. 10 San Gabriel, which is being reamed at 4,724 feet preparatory to running in a string of 9-inch.

The Alamitos Heights town lot area now under development in the western part of the Seal Beach Field is located within the corporate limits of the city of Long Beach and as a result that city has jurisdiction over any work undertaken. It will be recalled that the electorate of Long Beach at a recent election restricted a part of the Alamitos town lot area against the drill and court action may follow in order to clear up the situation. The Pacific Electric Railway's right of way crosses the southern part of the Seal Beach Field in an east-west direction and at the last election the voters decreed that all property lying south of these tracks should be restricted against drilling. This automatically prevents work of any nature in or around Naples, a subdivision lying within the city of Long Beach, notwithstanding that part of this territory might prove productive. Several attempts have recently been made to secure a lease on the Pacific's right of way and, while the railway company is receptive, the Long Beach City Council has been advised that this property cannot legally be developed. This right of way has practically been proven up but the fact that it is the line of demarkation between the area opened to drilling and that still restricted involves the question of whether the right of way itself is legally subject to the restrictions imposed.

Park Controversy

Recreation Park is another choice piece of potential oil land which is causing the Long Beach City Council no end of trouble. Several cash bonuses have been offered for the drilling privilege and, while the City Council had tentatively agreed to lease a portion of the park to the Jergins Trust, this offer was cancelled when the donors of the land threatened to take it back if it was leased for oil development. Several competing companies had also decided to seek to invalidate any lease given to the A. T. Jergins Trust unless it was made in the customary manner by asking for public bids. The City Council summarily ended all negotiations and dropped the attempt to lease this property for development. No further move has since been made to lease this public park but it is understood that the City Council has been sounded out as to the possibility of securing a lease on The Goosenecks, a six-acre tract owned in fee. This property consists of a number of small parcels of land just west of the Pan American's extension well and since it is owned by the city with no strings attached it is probable a satisfactory lease will be closed.

New Seal Beach Area?

The municipality of Seal Beach, which lies east of the city of Long Beach, by an appropriate ordinance enacted by its board of trustees a few days ago, will permit drilling at any point within the city limits on and after April 18. The people of this city circulated a general petition and the majority in favor of lifting present restrictions was so large that the board of trustees decided it was not necessary to place this question before the electorate. On the surface the lifting of restrictions at Seal Beach does not seem to have any great bearing on the present production situation but to those familiar with the possibilities of this district it is of prime importance. The city of Seal Beach is intensely subdivided and attention is directed to the possibility of the existence of another field west of Seal Beach which would bear the same relationship as the town lot area at Huntington Beach bears to the old field at that point. Several geologists have been of the opnion that the area paralleling the ocean west of Seal Beach presents exceptional possibilities and while this is merely a supposition it is quite possible some drilling will eventually be undertaken. The only drawback is that this particular area is intensely subdivided and the property owners want 95 per cent of the oil and a substantial cash bonus for signing on the dotted line.

Huntington Beach

There were only two new wells finished in the Huntington Beach Field during the current week, although there are still between 40 and 50 drilling projects in the town lot area remaining to be completed either as commercial producers or abandoned as dry holes. The best well finished this week was the California Eastern's No. 2 Treat, which surprised everyone by coming in flowing 625 bbls. daily from 4,320 feet. The only other completion listed was the Byron Oil Co.'s No. 1 Huntington, which is pumping 180 bbls. of 19.6 gravity oil daily from 3,917 feet. This hole was plugged back from 3,933 feet due to bottom water and since the present output is cutting approximately 20 per cent, another plug may have to be put on bottom to remedy this condition. The outpost of the San Martinez on Ninth Street just back of the ocean front is down over 4,700 feet and while no accurate information is available as to the exact status of the well, due to the company's policy of withholding data on all important holes, it is not believed the outlook is very favorable. Some shallow showings were found around the 3,100-foot level and while they were not tested it was reported they might prove productive. The expected deep sand has so far failed to show up. The Standard, which is running three strings of tools on the Pacific Electric property along the ocean front and a like number on the Huntington Beach lease, is making preparations to extend its concrete protection wall from Seventeenth to Fourteenth Streets, a distance of three blocks. This retaining wall, which is of concrete construction, prevents waste oil and sump water from polluting the bathing beach and at the same time affords the company additional room for drilling on the Pacific Electric lease, as the bluffs at this point must be supported to afford adequate foundation for the various rigs.

Long Beach

The Delaney Petroleum Corp. finished an excellent flowing well in the older section of the Long Beach Field early in the week and this new producer will probably soon be followed into production by another, No. 5, now down 4,550 feet. The Delaney's successful completion was No. 2, drilled to 5,389 feet and finished with a 5⅞-inch oil string. It started off flowing 710 bbls. of clean 26.8 gravity oil initially. The California Petroleum also listed a new well for completion but it was comparatively small, rated only at 130 bbls. of clean 26.2 gravity oil daily. The well is No. 3 on Foster lease No. 2, which was completed in the upper sand at 3,120 feet and finished with an 8¼-inch oil string. There are several other likely looking drilling projects under way in this field and additional completions can be anticipated from time to time. The Rio Grande Oil Co. is run-

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ning the oil string in No. 1 Flower State and it should be producing from 5,305 feet within a week or 10 days. The General Petroleum's No. 1 Koberly and No. 3 of the Graham & Loftus Oil Co. should also both be finished in the near future.

The California Eastern has just passed the 3,700-foot level in No. 1-A Peacock, its second undertaking on this lease, the first hole having been lost because of an unsuccessful fishing job. No. 1 Masser, another recent spud, is down 2,800 feet, while the company's No. 11 Marine, a deepening project, is being redrilled just off bottom at 4,176 feet. The Richfield Oil Co.'s No. 12 Haas, located in the highly productive section of the field, will be finished in the deep zone around the 5,000-foot level within 30 days. The Union has spudded in a new hole, No. 15 Long Beach Community, and will probably put No. 13 on a production test soon, as it looks quite promising at 4,725 feet.

Rosecrans

The Barnsdall company has just completed one of the largest wells ever finished in the Rosecrans Field, which was discovered back in May, 1924. The company's new producer was No. 15 O'Dea, which tanked 800 bbls. of clean 38.2 gravity oil during the first six hours. This is at the rate of 3,200 bbls. daily and since the gas pressure has been unusually stable at 550 pounds on the tubing and 650 pounds on the casing it is believed present production will be maintained at least for several days. This well, which was carried down to 4,955 feet and finished with a 4¾-inch oil string carrying 250 feet of 100 mesh screen, blew in as a gas well last January, flowing approximately 2,000,000 feet from 3,896 feet. Drilling was later resumed, with the result that upon its completion as an oil well it rates with some of the largest completions contributed by this field. The Barnsdall has one other drilling project, No. 8 Rosecrans, in this field and it will probably be finished within 30 days. A string of 11-inch has been landed at 4,037 feet and drilling will be resumed within a week. The Union has three potential producers on the Howard Park property but two of them, Nos. 29 and 34, are being temporarily delayed because of mechanical trouble.

Richfield

Three new wells were finished in the Richfield district, two by the California Petroleum and one by the Chanslor-Canfield Midway Oil Co. The latter's completion was No. 6 Richfield, which started off pumping 250 bbls. of 22.4 gravity oil daily. This new well, carried down to 4,497 feet, was finished with a 6¼-inch oil string carrying 358 feet of shop perforated landed on bottom. There are two other drillers on this property, Nos. 7 and 8, both of which have just passed the 2,000-foot level. The California Petroleum's two new acquisitions were No. 13 Richfield Consolidated and No. 22 Yarnell. The former was good for 230 bbls. daily, while the latter is making 310 bbls. from 4,633 feet. The Associated's No. 2-A Thompson, finished about three weeks ago, continues flowing at a good rate, in fact, it has registered an appreciable increase instead of falling off, as is usually the case. The Union should bring in No. 12 Y. L. G. and No. 6 Thompson & Goodwin in the Richfield district within two or three weeks and while large production is not anticipated they should result in commercial production from around the 4,500-foot level. On the Stern lease the company is running four strings of tools and judging by the depths of this quartet one or two should be tanking oil soon. The General Petroleum should also add a new well or two on either the Mullin or Hugo lease.

Brea Olinda

The General Petroleum has just concluded a redrilling and deepening job on No. 2 Tonner in the Brea Olinda area and it started off flowing 795 bbls. of clean 26.2 gravity oil daily upon being returned to production. This well has had quite a varied career, as it was originally completed at 1,700 feet. It is now producing from the 2,600-foot level and it has something like five or six different strings of pipe in the hole. It was recompleted with a 4½-inch oil string carrying 800 feet of perforated but when this became stuck at 2,370 feet it was found necessary to run in 265 feet of 3-inch liner. The Shell should finish several new producers in this field during the next 30 or 60 days and, while the company had the misfortune to twist off six stands of drill pipe in No. 2-A Puente while rotating ahead at 4,929 feet, it is not believed this delay will hold up progress for more than a few weeks. No. 40 Columbia will be cored within a day or so and, while the outlook at 5,275 feet is not any too promising, further drilling might result in a change for the better. The Union's No. 3 Olinda is perhaps one of the most interesting drilling projects under way in the Fullerton or Brea Olinda Field as it has developed more than the usual amount of oil sand expected at this point. It has just passed the 3,140-foot level and since it is still in the oil sand drilling will continue. The well is in proven territory but will probably result in a much larger production than originally expected.

The California Petroleum finished No. 9 on Mattern Lease No. 3 in the Santa Fe Springs Field a few days ago and the initial pumping of 320 bbls. of fairly clean 35.2 gravity oil daily is holding up quite well. This new producer is a Meyer zone completion, having been drilled to 4,594 feet and finished with a 6⅝-inch oil string carrying 425 feet of 120-mesh screen. The Associated has just recompleted No. 8 Vickers in the Inglewood Field after cleaning out to bottom, 2,538 feet, and the well is pumping 95 bbls. of 21.1 gravity oil cutting approximately 2 per cent. The Main Oil Co., after drilling two dusters near Wasco in northern California, has finished its No. 1 Leonards in the Torrance Field at 3,510 feet. It is a 40-bbl. pumper, the oil testing 18.2 degrees and showing a cut of 3 per cent. There have not been any completions listed in the Dominguez Field for several weeks but it is probable two or three new wells will be finished soon, notwithstanding drilling has been curtailed to a minimum.

Ventura

The Associated has just completed No. 4 Hartman in the northern part of the Ventura Avenue Field and, while the result of the first 24-hour production test is not yet available, it looks good for around 2,500 bbls. daily. This is probably one of the most important wells in the field at present, as it will undoubtedly result in the drilling of several additional holes still further north if large production is secured. It has just started flowing from 6,550 feet and hence no accurate estimate is available. Telegraphic reports indicate it is flowing approximately 100 bbls. per hour. The Associated appears to be easing up on drilling operations in this field and will probably continue to restrict its drilling operations wherever possible due to anticipated heavy production which should result from drilling work at Seal Beach.

The Bolsa Chica Oil Co. should bring in at least a 2,000-bbl. well upon completion of its No. 2 Hartman and with only about 50 feet to go in order to reach the projected completion depth of 6,450 feet it should be tanking oil within two or three weeks. G. J. Magenheimer has landed a string of 11-inch in his No. 1-A Hartman, which was spudded in following the loss of the first hole several months ago due to mechanical trouble. The Petroleum Securities has spudded in No. 2 Willett in the southern part of the field and is now running two strings of tools on this property and a like number on the Orton lease adjoining. The Shell, with several wells rapidly nearing the 6,000-foot level, should substantially increase its daily production in the near future.

Goleta

The Miley Exploration Co. has spudded in No. 4 Tecolote in the recently discovered Goleta Field in Santa Barbara County and while no general expansion work is contemplated, it is believed another well or two will be started in order to determine definitely future possibilities. No. 2, the discovery, is making around 300 bbls. a day, while Nos. 1 and

3 are still drilling. The Transcontinental Oil Co., which will operate under the name of the Santa Barbara Oil Co. in the future, has a rig going up for its first well and drilling will get under way soon. The California Eastern has also started work on its initial hole and this company will proceed to test out its acreage.

The Barnsdall Oil Co. has tied up approximately 1,900 acres about 2 miles west of the discovery well and will probably test out its holdings within 30 or 60 days. Joseph B. Dabney and several associates recently incorporated the Goleta Oil Dome Co. and will likewise probably start active work soon. The Richfield Oil Co. completed negotiations for approximately 500 acres about 2 miles east of the discovery well but under the terms of the lease drilling will not be required until production is secured within 500 feet. It is possible, however, the Richfield will undertake to drill a test hole. The Shell is reported to have become interested in this general region lately and may eventually undertake work. Considerable leasing was undertaken in Santa Barbara County following completion of Miley's discovery and practically every acre of government land was filed on. The Forestry Department recently announced that 140 government oil and gas permits had been granted in the Santa Barbara National Forest by the government land office as a result of recent oil discoveries.

Southern California Wildcats

The Union is abandoning No. 1 Moser, a wildcat located west of the northern part of the Rosecrans Field, and no further work is contemplated in this area. This hole was taken over from another operator around the 4,500-foot mark and carried to its present depth, 5,690 feet. The Union did not look with much favor on this particular district but the company had several hundred acres under lease which justified a test before being turned loose as unfavorable. It is reported that the Dominguez Extension Oil Co. has found a slight showing of oil and gas in its No. 1 Compton, a wildcat in Section 22-3-13, but this could not be confirmed. Because of the extreme depth, it would require more than a stray sand or two to result in commercial production. Should this well be successfully completed several prominent geologists are going to be very busy as a number have agreed to drink all the oil produced.

The General Petroleum's No. 1 Lomita, a wildcat at Sunset Beach, has taken on a rather doubtful outlook since passing the 4,900-foot level, although it cannot yet be classified as a duster. The Smith Petroleum is making another pumping test on its No. 1 Johnson near Lawndale from around the 6,100-foot level, but the possibility of securing commercial production is remote. The Standard has filed an abandonment notice on its No. 1 Austin in Topango Canyon near Santa Monica at 2,490 feet, due to the unfavorable outlook. This well was started about a year ago, following the development of a shallow showing found on the Austin property while the owner was sinking a water well. The Standard has something like 1,000 acres under lease and it is possible some further exploration may be undertaken.

Interest in the wildcat district at Potrero has fallen off considerably during the past 30 days due to the failure of the California Eastern and General Petroleum to pick up the sand found by the Associated last November. The California Eastern has a rig up northwest of the Associated's test and spud is scheduled to be made early next week. Operations in the past have been centered south of the Associated's test. It is possible the Associated will also undertake some new prospecting in this area or drill out its No. 1 Cypress before going ahead. The property on which the Associated's discovery well is located is owned in fee but it is problematical whether the company will be able to secure further extensions on its lease holdings. The logical thing to do, of course, under present conditions, is to sit tight pending the return to normalcy, but then it is sometimes difficult to convince property owners that too much oil is being produced in other areas. Some leasing operations have been started near the California Eastern Oil Co.'s tank farm at Two Hundred Fifteenth and Harbor Boulevard and, while the company doing this work is under cover, it is thought to be the Pan American. At any rate, if sufficient acreage is tied up actual drilling is supposed to get under way on or before April 30.

Northern California Wildcats

The Union is abandoning its No. 1 Colm, west of the Belridge Field, at 1,070 feet, following the failure to successfully produce from the shallow tar zone. The company will undoubtedly undertake further work in this area unless the results found by this series of structure survey holes do not warrant it. The Standard's No. 1 Bacon in this general area will probably be spudded within two weeks. The Milham's Buttonwillow wildcat in Section 8-28-23 is standing cemented at 4,205 feet but is scheduled to be drilled out within a day or two. The Pacific Eastern has not yet found anything of importance in its Bakersfield wildcat but this hole cannot yet be classified as a duster even though it is approaching the 4,000-foot level.

The Chanslor-Canfield Midway Oil Co. is apparently fairly well sold on the possibilities of the area in and around Delano for work was recently started on a second test, the first hole having been abandoned several months ago. Prospecting work in the Kettleman Hills area was practically at a standstill during the past week due to the fact that the General Petroleum is held up with a rather difficult fishing job. It is reliably reported that the hole is practically beyond recovery as the crew has lost everything but the boilers and derrick. Neither of the two wildcats at Camarillo in Ventura County showed any improvement during the past week. The Standard is reaming at 4,950 feet, while the California Petroleum is rotating ahead at 1,925 feet. The Standard's wildcat Montalvo, also in Ventura County, will result in an early abandonment unless the formation shows some change for the better. The Chanslor-Canfield Midway Oil Co. recovered from a fishing job which has been holding up progress in No. 1-A Hobson for several months and drilling has been resumed. No. 1-B on the same property is drilling ahead at 3,625 feet. The lease upon which these wells are being drilled lies west of the Ventura Avenue Field. The Federal Exploration Co. reports a showing of gas in its No. 1 Kinsella at Tipton in Tulare County but the extreme depth, 5,422 feet, makes the outlook for oil rather unfavorable.

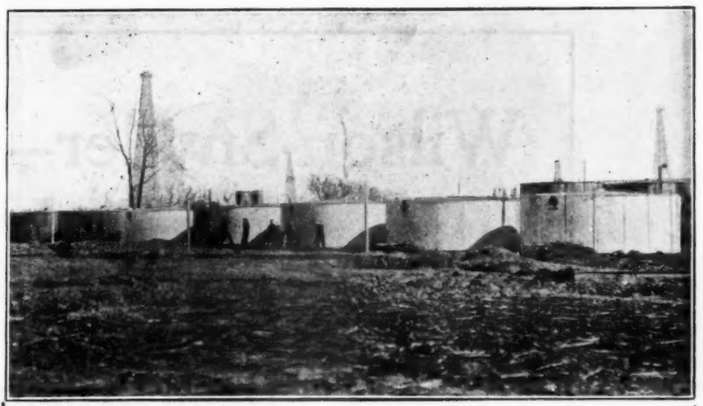
MEXICAN FIELDS

(Continued from Page 44)

can Petroleum Co.'s No. 40, Lot 1, Cacalilao, is in white lime at 2,185 feet. New England Fuel Oil Co.'s No. 6 Caballero cemented 8-inch in gray lime at 1,200 feet. William Neinau Co.'s No. 9 W. Maguabes cemented 8-inch in gray lime at 1,214 feet; its No 3 Buena Vista is in gray shale at 1,150 feet. Transcontinental Petroleum Co.'s No. 145, Lot 2 Cacalilao, is in lime at 1,816 feet; its No. 276 cemented 8-inch in gray lime at 1,200 feet; its No. 285 is in shale at 1,075 feet ;and it has No. 206, Lot 2, rigged. Cia. Pet. Territorial, No. 41 Salvasuchi is in gray lime at 1,450 feet. Vera Cruz Mexican Oil Co.'s No. 11 Buena Vista is in gray lime at 1,900 feet.

Ebano

Mexican Petroleum Co., in its Ebano sector, has the following: No. 16 Ebano is in gray lime at 2,460 feet; Nos. 23 and 26 are derricks; No. 43 Midway is in gray lime at 1,630 feet; No. 53 is in gray shale at 230 feet; No. 58 is in gray shale at 1,647 feet; No. 59 is in shale and shells at 1,190 feet; No. 66 is in gray lime at 1,280 feet; No. 70 is in gray lime at 1,475 feet. In its La Dicha: No. 105 is in black lime and chert at 2,440 feet; No. 109 is in gray lime at 2,470 feet; No. 113 is in gray lime at 1,820 feet; No. 124 is in gray lime at 1,506 feet; No. 125 is in gray lime at



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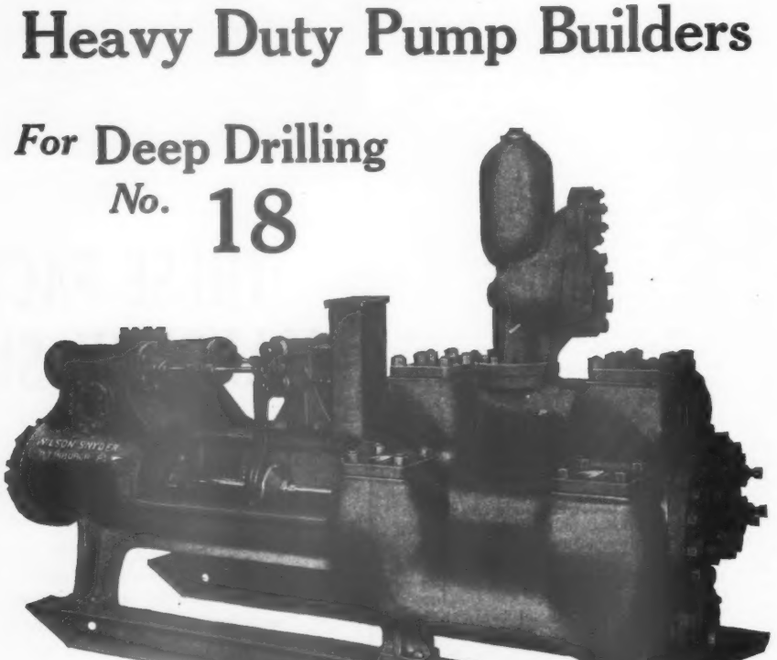

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1,720 feet; No. 131 is in gray lime at 1,840 feet; No. 134 is in gray lime at 2,075 feet; No. 137 is in gray lime, with the hole full of oil at 2,445 feet; No. 163 is in gray lime at 1,340 feet. In its East Dicha: No. 124 is in black lime at 1,880 feet; No. 131 is in gray shale at 450 feet. In its Chijol: No. 60 is in gray lime at 1,340 feet; No. 71 is in gray lime, with the hole full of oil, at 1,470 feet. In its La Pez, No. 15-A is in gray lime at 2,375 feet; its No. 20 is in gray lime at 2,010 feet; its No. 24-A is in gray lime at 1,820 feet; its No. 25 is a derrick. Its No. 2 Camino is in green lime at 1,750 feet; its No. 4 is in shale and shells at 1,210 feet. Its No. 123 Coneca is in gray lime at 2,380 feet; its No. 138 is in black lime at 2,360 feet. Its No. 7 Margaritas is in gray lime at 1,640 feet. Its No. 1 Tortuga is in gray lime at 840 feet; its No. 2 is in pink shale at 520 feet.

And in the Caracol, just west of Tampico, Mexican Petroleum Co.'s No. 60 is rigging; its No. 61 is in gray lime at 1,785 feet, and two derricks are up over other locations.

National Lines' No. 54 Conteca (Ebano sector) is in gray lime at 1,537 feet; its No. 62 is in gray clay at 1,070 feet; two locations are rigging.

South Fields

In the south fields, Huasteca Petroleum Co.'s No. 91 Tierra Blanca is in gray and brown lime at 1,946 feet; its No. 94 is in gumbo a 1,003 fteet; its No. 95 is in blue shale at 250 feet. In Chapopote Nunez, its No. 17-A is in shale and gumbo at 1,120 feet. Up in Chinampa, its No. 7, Lot 163 is in shale and rock at 1,700 feet. Mexican Eagle Oil Co., Ltd., No. 5 Chiconcillo is in hard rock at 2,349 feet. Mordelo Vincent is rigging for his No. 8, Lot 8 Tepetate.

Northern Miscellany

Among the miscellaneous northern tests consider the following: La Corona Petroleum Co.'s No. 34, Lot 6 Corcovado, is rigging. Cosmos Oil Co.'s No. 133, Lot G. Corcovado, is in gray lime at 1,565 feet. International Petroleum Co.'s No. 16, Lot 6, Corcovado, is rigging. Cia. Pet. Franco Espanola (Marland) No. 80 Limon is rigging rotary; its No. 82 is in lime at 2,025 feet; its No. 84 cemented 6-inch in gray lime at 1,415 feet; its No. 86 is running 8-inch in gray lime at 1,415 feet; its No. 91 is fishing for drill pipe in gray lime at 1,320 feet; its No. 97 is a derrick and its No. 98 is rigging rotary. Intermex Oil Co.'s No. 13, Lot 29 Altamira, cemented 8-inch in gray lime at 1,090 feet. Kern Mex Oil Fields, Ltd.'s No. 3 Clarin cemented 8-inch in gray lime at 1,500 feet. Mexican Gulf Oil Co.'s No. 72 El Barco is in brown and white lime at 2,030 feet; its No. 31 Salinas is a derrick.

The Texas Company's No. 1 Lomo del Pozo is in the Tamasopa at 3,250 feet; its No. 2, Lot 80 Quebrache is in gray lime at 2,448 feet.

CANADIAN FIELDS

(Continued from Page 55)

feet. Dalhousie No. 1, LSD 4, Section 18-20-2w5, is at 3,610 feet and making new hole below the cement, the bottom of which was at 3,600 feet. Drilling will be continued till the top of the limestone is definitely reached, when the casing will be cemented and the test drilled into the deep lime. Dalhousie No. 5, LSD 16, Section 30-19-2w5, is at 3,725 feet and drilling.

Sentinel Oils, Section 8-20-2w5, is at 550 feet and drilling, straightening out the original crooked hole which was down to 680 feet. Between 390 and 400 feet the drill got a coal seam, apparently making the division between the Belly River formation and the Benton shale. The 20-inch casing was set at 200 feet.

Drilling Operations

Stockmen Oils, LSD 1, Section 27-20-3w5, is drilling at 3,900 feet and apparently at the bottom of the Kootenay. The hole has apparently crossed a fault, due to an overthrust from the west; this fault may add 500 to 600 feet to the drilling. Open hole has been drilled below the 10-inch casing at 3,218 feet.

Regent Oil Co., LS 16, Section 1-20-3w5, is drilling at 575 feet.

Calmont Oils, LSD 2, Section 1-20-3w5, is shut down at 3,060 feet with 10-inch casing carried to 3,000 feet. The crew is waiting for more casing, which is held up by bad roads. At this depth the test is in the lower Dakotas, with two fair gas shows. The company's shareholders at the annual meeting held recently at Calgary re-elected the following directorate: A. G. Clarke, president; J. C. Dallas, vice president and managing director; C. S. Henson, secretary; George F. Tull, Dr. L. A. Maxwell and Ashworth Anderson, directors.

Advance Oil Co. holdings to the extent of 1,500 acres in the Turner Valley will probably be taken over this spring by Vancouver and eastern interests which will drill one or two tests. G. S. Fox, representing the General Petroleum Corp. of California, has been looking over the field recently. Scotia Oils, Ltd., of Weyburn, Sask., which last year made a tentative location in LSD 13, Section 5-19-2w5, is arranging to drill this spring on its Turner Valley acreage. Anglo-Dutch Oil Co., Ltd., is securing a rig for a test in NW, LSD 8, Section 11-20-3w5, where a test will be put down on a royalty basis on Capitol Oil & Natural Gas Co. acreage. The Capitol is planning to drill on a location midway between the Illinois-Alberta and McLeod No. 2 producers.

In the foothill areas, Kew Oils E half, Section 8-20-4w5, has built a 2½-mile road to connect with the main highway through the Bow River Forest Reserve and is now working on camp buildings. As soon as the roads are in shape for travel the drilling rig will be moved in for a test. The location is on what is known as the Paramount structure in the Rickert area. Paramount Oils, Ltd., has a location in the same area is LSD 2, Section 29-19-4w5, and is constructing its camp.

Morley Reserve

In the Morley Reserve area, Gold Coin Oils, is reported drilling at 1,530 feet with casing run to almost the bottom of the well. It is reported that Wabash Oils, Ltd., drilling on the Lea lease, got fair shows of shallow oil in the Kootenay formation around 100 to 200 feet and is securing 500 acres of close-in territory, partly to the east near Chiniki Lake and partly to the south and southwest along Kananaskis River.

On the Ghost River structure in the foothill belt, the Hudson's Bay-Marland Oil Co., is unofficially reported to be making a tentative location in Township 26-6w5, north of Morleyville. This is the first report of even tentative drilling activity on the part of the company, which last year intimated that 1927 would be spent entirely in preliminary work and that no drilling would be undertaken till 1928. The Hudson's Bay-Marland has 3,000 acres in the north of Township 26 and 1,000 acres in Lots 7 and 8 in Morleyville settlement, and is reported to have tied up 2,000 acres in the Stoney Reserve on the southern end of the structure. The structure is somewhat similar to that of the Turner Valley Feld, but geologists claim the drill will get the Dakotas around 1,400 feet and the Madison lime at 2,500 to 3,000 feet, which is about 1,000 feet less than in the Turner Valley. Gordon E. Burdick and associates of Vancouver, B. C., hold about 8,000 acres; and Ghost River Oils, Ltd., of Calgary has secured considerable acreage and has a location for a test, to start drilling this spring in SE Section 6-28-6w5.

In the Border fields, Urban Oils, Ltd., Section 4-1-15w4, near Coutts, which got a show of oil and later discontinued drilling at 3,420 feet after an unsuccessful shot is to be cleaned out and given a further pumping test before being finally abandoned. Further east, in the Skiff area, Devenish Petroleums, Ltd., LSD 5, Section 27-5-14w4, is reported to have finished underreaming and running 10-inch casing, and has resumed drilling at 2,330 feet.

In the Nemiskam district, southern Alberta, Canadian Western Natural Gas Co. of Calgary, is reported clearing a site for No. 8 well 2½ miles south and

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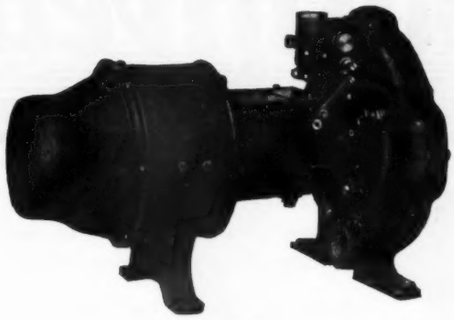

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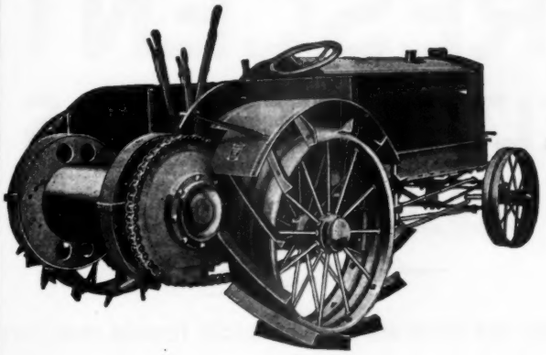

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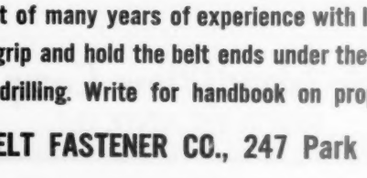

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2 miles west of Namiskam. This test is apparently an extension in a new direction of the drilling in the Foremost Feld.

On the Montana side, the S. Hart Green-Lerum No. 1, Section 11-27w2, southeast of Sweetgrass, Mont., has piped water from the Lerum reservoirs to save hauling, and is underreaming to lower the casing, preparatory to making new hole. The test was shut down last fall at 2,050 feet with casing at 1,960 feet, and was thought to be 20 feet above the Sunburst sand. It is being financed by Winnipeg interests.

Irma-Wainwright

In the Irma-Wainwright Feld, east central Alberta, the Wainwright Dome Oils No. 1, LSD 7, Section 31-45-6w4, is being shut down temporarily. A standard outfit has been unloaded for No. 2 test which will be started on another portion of the lease. No. 1 rotary test will be let stand till No. 2 is finished. National Exploration Co. is moving the outfit from Wainwright-Dome No. 1 to its own leases, where it will be used for a test, probably in LSD 1, Section 30-45-6w4. Price Oil & Development Co. has been organized in Winnipeg, Man., by British and Canadian capital to construct a refinery at Wainwright. An ultimate capacity of 10,000 bbls. is contemplated. The company holds acreage in the Wainwright and Turner Valley Fields. R. A. Price of Winnipeg is president and managing director.

On the Ribstone-Blackfoot structure, east of the Wainwright Field, Ribstone Oils No. 1, LSD 1, Section 1-46-1w4, has straightened about 230 feet of hole, bringing the new hole down to close to the original depth of 1,090 feet.

In northern Alberta, Black Rock Petroleums, Ltd., is making preparations to resume drilling on its test at Fort Vermilion on the Upper Peace River, shut down last fall at 1,200 feet.

In the Athabaska district, R. D. Canfield of Oakland, Calif., visited Edmonton recently in connection with a project for a $200,000 plant for the development of the tar sand deposits near McMurray. The Altapave Manufacturing Co., represented by Mr. Canfield, has secured from the Dominion government considerable acreage along Horse Creek, a tributary of the Athabaska. A test plant will be brought to Edmonton from New York and operated, pending the construction of the commercial plant. The work is conditional on construction of a 3-mile extension of the Alberta & Great Waterways Railway, which the Alberta provincial government will likely undertake this season. The initial separation plant to be put in will have an estimated capacity of 500 tons of tar sand a day.

In Saskatchewan

In the province of Saskatchewan, Unity Valley Oil Co. No. 1 SE Section 23-41-24w3, is reported to be resuming drilling at 2,333 feet, after being shut down for the winter. In the Simpson district, the Simpson Oil Co., Section 9-29-25w2, is moving in additional casing, but has not yet resumed drilling.

In southern Alberta, Toronto interests this week filed on a block of 40,000 acres west of the Cypress Hills Forest Reserve and southeast of Medicine Hat. It is understood that Hudson's Bay-Marland Oil Co. geologists went over the structure last season, and that the Toronto men blanketed the entire structure. The filing is stated to be the second largest in the history of the Lethbridge land office.

In Ontario, the Southern Ontario Gas Co. is reported drilling at 1,100 feet with a test for gas on the Nick Baldwin farm, south of the Talbot Road and west of Port Alma, in Romney Township, Kent County.

In Camden Township, Kent County, the new shallow field, opened some months ago by the drilling of Vacuum Gas & Oil Co. No. 1 producer on the Earl Smith farm, seems to be settling down to a small pumping production. Vacuum No. 1 had what looked like a good flush production, reported as high as 200 barrels a day; the oil came apparently from the upper part of the Onondaga limestone, at around 400 feet. Following the completion of No. 1 well, two additional shallow producers were drilled, one by the Vacuum Gas & Oil No. 3 east of the big producer finished a dry hole. Vacuum No. 4 is now drilling south and west of No. 1. Considerable oil has been shipped, but at last reports the No. 1 producer was stated to have dropped to a settled production of about 5 bbls., while the two newer producers were each making 2 bbls. and the old producing well about 1 bbl. The field is apparently a small extension westward of the former Thamesville Pool, which some years ago got a very promising but short-lived production in the top of the Onondaga.

GULF COAST FIELDS

(Continued from Page 51)

Mound Pools, is at 904 feet. No. 1 Wolff is at 932 feet; No. 24 Davis around 1,053 feet and No. 4 Beard is drilling below 2,800 feet. Sulphur has been found at this dome, which is about 1½ miles from north to south and 1 mile east and west.

Brazoria County, Clemens Dome: Roxana Petroleum Corp.'s No. 4 Clemens is drilling at 4,009 feet and No. 2-A Pabst at 4,424 feet. Allen Dome: Roxana Petroleum Corp.'s No. 2 Reese is drilling about 1,100 feet. No. 3 Allen is at 5,386 feet and No. 1 Bernard River is drilling around 4,900 feet. A sulphur deposit also has been found at both these domes. Stratton Ridge Dome: Gulf Production Co.'s No. 2 Perry on the south side of the dome is drilling around 1,600 feet. The Associated Oil Co.'s No. 1 Seaburn is at 2,806 feet and a joint test by the Pure Oil and Humphreys Corp. on the Armstrong land is drilling around 2,345 feet.

Jefferson County — Fannette Dome: Gulf Production Co.'s No. 10 Thomas is drilling around 1,200 feet. Same company's No. 2 Bordages is sidetracking at 5,165 feet and No. 3 Bordages is drilling around 3,900 feet.

Matagorda County—Hawkins Dome: The Shepherd Mott Oil Co. is abandoning No. 1 Murphy at 3,115 feet. Gulf Production Co.'s No. 8 Craig is drilling around 4,235 feet. No. 3 Sanborn is at 5,110 feet and No. 2 Parkinson at 1,305 feet with location made for No. 3 Parkinson.

Liberty County—Moss Bluff Dome: Union Sulphur Co.'s No. 5 Kyle is drilling at 845 feet. The Liberty Bell Oil Co.'s No. 1 Eaton is idle at 1,425 feet, as is the test near Cleveland. A derrick is standing for the Barlow Oil Co.'s No. Minchliffe.

Well Fluctuates

The Gulf Refining Co.'s No. 4 Lutcher Moore Lumber Co. lands in the new Stark Pool, Calcasieu Parish, Louisiana, not far from the Sabine River, which had been flowing 2,200 bbls., suddenly dropped off to 900 bbls. and the gas pressure decreased from 100 to 25 pounds. Late in the week the pressure increased to 125 pounds and the well is now flowing 1,450 bbls. through one-half inch choke. The well was completed in January and started flowing 2,500 bbls. pinched in, from 4,000 feet. Apropos of what has been said concerning new domes and the lack of excitement, the Stark district stands out as an example. The Gulf company and the Standard Oil Co. of Louisiana held all the available acreage within sight of the well. Recently the Gulf company took over the Standard company's leases on the lands of the Industrial Lumber Co. Only two wells are drilling there now. The Gulf company's No. 5 Lutcher Moore Lumber Co. lands is drilling below 3,300 feet and No. 1 Industrial Lumber Co. is below 850 feet. Previously to the adoption of the geophysical methods and immense blocks of leases, 50 or more wells would now be drilling around the Stark Dome.

Wells Drilling

In the Boling Pool, on the northeast flank, The Texas Company's No. 2 Farmer is around 3,665 feet, and the Sun Oil Co.'s No. 2 Farmer is at 2,745 feet. The Texas Company's No. 3 Felder is below 4,500 feet.

The old Markham Pool in Matagorda County is showing more activity than it has for several years. The Rycade Petroleum Corp. is putting No. 3 Myers on the beam at 3,356 feet. The well swabbed 120 bbls. in eight hours, and it is believed

it will pump from 200 to 250 bbls. per day. It is on the southeast flank of the dome. The Rycade's No. 1-B Kountz is drilling around 3,620 feet after drilling through a sand showing gas and black sulphur water. The Powers Production Co.-Houston Gulf Gas Co.'s No. 3 Myers on the west flank is drilling below 3,775 feet. Hamill and Moody Oil Corp.'s joint No. 1 Myers will test 14 feet of sand at 1,990 feet. It is on the dome. John Deering-Moody Oil's joint No. 2 Gray is preparing to make another test. No. 3 Gray is drilling below 3,050 feet. Their No. 1 Gray is heading 100 bbls. per day and making considerable gas.

Fort Bend County

In the Big Creek Pool, The Texas Company's No. 3 fee is drilling around 4,135 feet, and No. 4 fee is at 2,235 feet, with a location for No. 1 Wheat. The Gulf Production Co.'s No. 40 Davis is at 1,615 feet, and No. 41 around 1,300 feet. No. 2 Hausler is below 3,545 feet. No. 1 J. H. P. Davis is drilling about 3,560 feet, and No. 1-A is below 2,900 feet.

At Blue Ridge, on the south flank of the dome, the Humphreys Corp.'s No. 3 West-Schenck is drilling at 2,035 feet. Abercrombie Oil Co.'s No. 9 West-Schenck is at 2,095 feet. Gulf Production Co.'s No. 10 West-Schenck is below 800 feet. Same company's No. 10 Luscher, on the southeast, is at 2,435 feet, and No. 5 Invincible on the southwest is around 3,185 feet. No. 9 Blakely, on the north, is below 3,090 feet, and No. 15-C is drilling around 3,025 feet. The Overly Production Co.'s No. 1 Blakely is at 2,985 feet. W. E. Woodruff, trustee, No. 1 Adams is drilling around 600 feet. On the northwest flank, Abercrombie Oil Co.'s No. 1-A Robinson is below 3,970 feet.

Gulf company's No. 4 Moore at Orchard is idle temporarily. It is being drilled with an electric rig. The current is obtained from high tension wires passing through the lease from Houston for distribution in small towns southwest of Houston.

Harris County

Benedum & Trees' No. 1 Hirsch, on the northwest side of the Humble Pool, is sidetracking at 4,510 feet. Atlantic-Simms joint No. 1 Burt & Griffith is at 3,135 feet. The Gulf Production Co. has a lease on the Bender 1,100 acres east of production.

In the Goose Creek Pool, the Gulf Production Co.'s No. 27 Smith on the east side is at 2,665 feet. The Humble Oil & Refining Co.'s No. 56 Smith is at 4,235 feet, and No. 70 below 5,125 feet. No. 17 Galliard peninsula is idle at 4,200 feet. No. 10 Beaumont state land in the bay will be deepened. The Gulf Coast Oil Co. is working over No. 16 Galliard 21 acres. The Lake Shore Oil Co.'s No. 3 Duke is drilling around 3,565 feet. M. & B. Oil Co.'s No. 6 Scorrgea is at 2,175 feet. F. F. Wilson has a location for No. 7 Busch 5 acres.

On the northwest flank of the Pierce Junction Pool, the Gulf Production Co.'s No. 3 Jones fee is at 3,616 feet. No. 1 Saunders is drilling around 3,400 feet. The Marland Oil Co.'s No. 4 Prudent is at 4,235 feet. The Rio Bravo Oil Co.'s No. 1 Bender is drilling deeper. Lee & Woodard's No. 1 Settegast is deepening at 3,480 feet. On the east side, the Texas Exploration Co.'s No. 10 Dooley is at 4,180 feet. Cullen and others' No. 8 Howe is at 4,045 feet.

Liberty County

In the South Liberty Pool, the Navarro Oil Co.'s No. 10 Harrison bailed salt water at 3,450 feet. The Texas Company's No. 7 Staiti is around 3,375 feet. In the new area, west of the Trinity River, the Associated Oil Co.'s No. 1 Hirschfield, heretofore carried as the Hirsch-Conley, is drilling below 3,875 feet. The Humble Oil & Refining Co.'s No. 7 Welder is deepening at 3,810 feet. The Gulf Production Co.'s No. 1 Bingle is at 3,800 feet, and No. 2 Marshall is around 2,545 feet. The west side of the river is sometimes referred to as the South Dayton Pool.

In the Hull Pool, in the northeastern part of the county, the Republic Production-Houston Oil Co.'s joint No. 33 Dolbear is at 3,570 feet, and No. 35 Dolbear is deepening at 2,650 feet. The Gulf Production Co.'s No. 84 Phoenix is around 4,100 feet, and No. 85 at 3,324 feet, with No. 11 Thomas below 1,700 feet. The Texas Company's No. 2 Hannah is drilling below 3,960 feet, and No. 1 Armlein is at about the same depth. The Texas Company-Vacuum company's joint No. 7 Hannah is a location. The Mecom Oil Co. is working over No. 2 Taylor around 3,730 feet. The Hull Oil Co. is doing the same with No. 2 Harrison. The Cannon-Davis No. 1 Crosbie has recovered lost tool, pulled liner and is deepening from 1,103 feet.

Hardin County

The Texas Company has the deepest drilling well in Hardin County in No. 3 La Jarza, on the east side of the Batson Pool, bailing around 4,480 feet. The Kirby-Capitol Oil Co.'s joint No. 7 Hodges on the north side is at 3,300 feet. In the old section, S. R. Buchanan's No. 93 Milhome is at 900 feet. The Sterling Oil Co.'s No. 6 Hooks is at 1,155 feet. The East Batson Oil Co.'s No. 8 Counselman is drilling below 1,400 feet, and the Deutser Oil Co.'s No. 1 Colorado is shut down at 1,050 feet. The Paraffine Oil Co. is starting No. 42 Knight, and the Acorn Oil Co. No. 65 Paraffine.

The Texas Company's No. 1 Homestake, in the Sour Lake Pool, is drilling below 1,518 feet. The Gulf Production Co. has a location for No. 3 Thomason.

In the Saratoga Pool, the proposed deep test of the East Side Oil Co. in No. 1 Ogden is drilling below 2,300 feet. It is on the east side of the pool. A location has been made for the Rainbow Oil Co.'s No. 1 Cotton. The Sun Oil Co. is starting No. 174 Texas Crude.

Other Pools

In the Orange Pool, the Gulf Production Co.'s No. 3 Granger is at 4,487 feet, and No. 11 Peveto is around 1,200 feet. The Texhoma Oil Co.'s No. 16 Chesson is at 3,435 feet. The Rex Petroleum Co.'s No. 4 Carello is drilling at 1,565 feet.

The Sun Oil Co.'s No. 11 Lockhart at High Island, Galveston County, is at 3,255 feet, and No. 12 Lockhart around 1,980 feet.

The Rycade Petroleum Corp. is rigging No. 12 Nash at Nash Dome.

At Barber Hill, Chambers County, the Humphreys Corp.'s No. 4-B Kirby is below 2,340 feet. Bennett Production-Moody Corp.'s joint No. 7 fee is starting, and No. 8 Japhet is below 2,985 feet. The Quintet Oil Co. is rigging No. 1 Harrison in the old North Dayton Pool.

South Louisiana Pools

In the Lockport Pool, the Vacuum-Gulf company's joint No. 11 Miller is deepening. No. 14 Miller is drilling about 4,424 feet. No. 15 is around 1,275 feet, and No. 16 Miller is below 1,700 feet. No. 2 Bordages is fishing at 5,500 feet, as is No. 4-A Farquhar at 4,300 feet. No. 6 Farquhar is drilling below 2,570 feet. No. 1 Fredberg & Wolf is also fishing at 4,400 feet. A location has been made for No. 3 Inde D' Bayou.

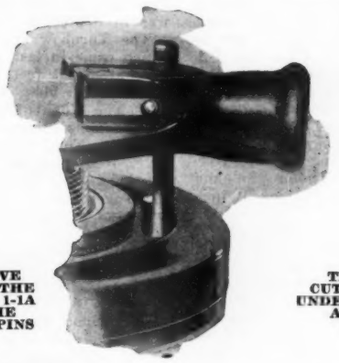
In the Edgerly Pool, the Gulf Refining Co.'s No. 41 Bright Penn is at 3,010 feet. The Rex Petroleum Co.'s No. 5 Hunter is at 4,035 feet. The Hercules Oil Co.'s No. 1 Paraffine is drilling around 2,540 feet. The Crotty Oil Co.'s No. 12 Lilliard is drilling deeper.

The Texas Company has two rigs running in the Jennings Pool. The Coastal Oil & Mineral Co.'s No. 94 Crowley has been rigged.

Outside of the Pools

Cameron Parish—Hackberry Dome: Yount Lee Oil Co.'s No. 10 Gulf land is at 3,345 feet. No. 4 State land is starting. No. 6 is below 4,740 feet. Union Sulphur Co.'s No. 1 Little is at 1,810 feet. No. 3 Gulf land is drilling around 1,900 feet. No. 2 Vincient is at 1,710 feet. No. 2 Gulf land is a location. Border Research Co.'s No. 1 in Mallard Bay is at 2,743 feet. No. 1 in Sabine Lake idle. The Pure Oil Co. is starting Nos. 4 and 5 at Sweek Lake, in the southeastern part of the parish, where it has developed production in two wells. One of these got the sand at 5,897 feet, being the deepest producer in the Gulf Coast region.

Calcasieu Parish—Sulphur Dome: Union Sulphur Co.'s No. 720 fee is deepening around 4,200 feet. Benkenstein and others' No. 1 Sulphur is also deepening at 4,150 feet. These are both old sulphur



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wells. The Border Research Corp.'s No. 1 in Calcasieu Lake is at 3,986.

Iberia Parish—Eagle Point Dome: Gulf Refining Co.'s No. 3-Z State land is rigging. Its No. 1 Broussard is idle at 3,195 feet. Calcasieu Oil Co.'s No. 1-A Schwing is around 2,655 feet. Border Research Corp.'s No. 1 Vermillion Bay is shut down.

Evangeline Parish — Pine Prairie Dome: The Texas Company's No. 2 Guillory is setting a liner at 4,200 feet.

Assumption Parish—Union Sulphur Co.'s No. 1 School lands setting 10-inch at 950 feet.

Jeff Davis Parish—F. I. Getty's No. 1 Lascaine is around 3,500 feet. Estropal Oil Co.'s No. 2 Duex is around 2,785 feet. Elton Oil Co.'s No. 1 Buller shut down at 2,065 feet.

St. Mary Parish—Border Research Corp.'s No. 1 in Grand Lake is at 4,205 feet idle, and No. 1 Cote Blache is also idle.

St. Martin Parish—Rycade Petroleum Corp.'s No. 1 Atchalafa is below 3,800 feet. Bowie Oil & Gas Co.'s No. 4 Bennaud is rigged. Ohio Oil Co.'s No. 3 Martin is still shut down.

Terre Bonne Parish—J. P. Bech's No. 2 Southdown is rigging.

Ascension Parish—Gulf Refining Co.'s No. 1 United land is rigging.

Coastal Wildcats

Jefferson County—Edmund and others' No. 1 Port, north of Port Arthur, is rigging.

Orange County—W. C. Wells' No. 1 Stark is rigging. Miller Drilling Co.'s No. 1 Brown, in the Gum Island section, is a location.

Montgomery County—Brain and others, north of Spring, shut down around 2,200 feet. Beard and others have a location 15 miles east of Conroe.

Harris County—Humble Oil & Refining Co. has started drilling No. 1 Warren on the Hockley Dome, 25 miles northwest of Houston. Dr. P. S. Griffith's No. 2 fee, north of Houston, fishing at 3,115 feet.

Washington County—Pratt-Hewitt Oil Co.'s No. 2 Koincky is at 1,900 feet. DeWare and others' No. 1 Lehman is at 2,365 feet. Brenham Oil Co.'s No. 1 Schurenburg is around 1,400 feet.

Formation tests are scheduled to start in the neighborhood of Pilant Lake, Fort Bend County, and the northern part of Galveston County, in the Clear Lake section, following the use of the seismograph and torsion balance.

Goliad County—Houston Oil Co.'s No. 3 Pettus drilling around 2,735 feet. Same company's No. 2 Parks is below 3,400 feet. The Pettus test is 10 miles west of Goliard, and the Parks 8 miles east.

Spindletop

The deep sand section of the Spindletop Pool is slipping every day. The daily average for the week ending Saturday was 53,000 bbls. and on Sunday it had declined to 49,000 bbls. This is less than one-half what the production was in September last.

The Turnbow Oil Co.'s No. 1 Weed, which came in last week as a 5,000-bbl. well at 5,100 feet, had decreased this week to 500 bbls., 40 per cent salt water. The Yount Lee Oil Co.'s No. 19 McFaddin is going on the beam at 3,817 feet. Its No. 18 fee was abandoned at 6,042 feet, with the drill stem stuck in the hole. No. 14 fee was abandoned at 3,050 feet. No. 6 Gladys bailed salt water at 3,319 feet. The Hines Oil Co.'s No. 1 Gordon is bailing at 5,050 feet. The Gulf Production Co.'s No. 4 Mann is bailing at 2,750 feet. Its No. 223 Gladys, in the old cap rock section, is pumping 15 bbls. at 850 feet.

The Yount Lee Oil Co.'s No. 27 McFaddin is drilling at 4,510 feet, and No. 28 at 4,275 feet. No. 29 is around 3,-000 feet. No. 30 is below 2,354 feet. No. 31 is at 1,565 feet. On its fee tract, No. 16 is running in tubing. No. 19 is going on the jack at 3,819 feet. No. 24 is drilling around 4,540 feet, and No. 25 is below 4,654 feet. On the Gladys lease, No. 3 is deepening at 3,-176 feet. No. 11 is drilling below 5,075 feet. No. 17 is setting 7-inch casing at 2,570 feet. No. 25 is drilling below 3,-565 feet. No. 26 is around 2,300 feet. No. 27 is rigging. On the Davis lease No. 7 is drilling around 2,000 feet.

The Atlantic Oil Producing Co.'s No. 1 McLean will deepen at 2,900 feet; No. 8, drilling at 4,450 feet; Nos. 10 and 11 standing. The Deep Sand Oil Co.'s No. 1 Rush is drilling at 2,300 feet. Hines Oil Co.'s No. 2 Parker, 3,650 feet; No. 2, a derrick. Sun Oil Co.'s No. 2 McLean, drilling at 4,825 feet; No. 4, at 5,125 feet; No. 11, a derrick; No. 12, a location; No. 9 drilling at 4,960 feet; No. 10, at 350 feet; No. 1 Price, 4,875 feet; No. 2 at 4,500 feet. Rio Bravo Oil Co.'s No. 50 T. & N. O., at 4,025 feet; No. 101, at 3,425 feet. The Plummer Oil Co.'s No. 1 Quinn is a derrick.

The Gulf Production Co.'s No. 9 Oakwood is around 5,155 feet, and No. 10 is at 4,510 feet. No. 7 Roche is below 4,-700 feet. The Spindletop-Western Oil Co.'s No. 2 Weed is rigging with a derrick up for No. 1 Deutser. The Hines Oil Co. cemented casing in No. 2 Banks at 3,025 feet. On the south end of the pool, the Magnolia Petroleum Co.'s No. 3 fee is drilling around 3,565 feet, and No. 4 fee at 4,365 feet, with a location made for No. 5 fee. J. O. Davis' No. 1 Gladys, one-half mile west of production, is at 4,996 feet. Hines Brothers' No. 2 Roberts, one-half mile east, is around 3,200 feet. The Texas Company has a location for No. 1 Garrick, north of production.

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LA.-ARK. WILDCATS

(Continued from Page 49)

has abandoned as dry at 1,754 feet No. 4-A Louisiana Central, Section 12-11-2e.

Claiborne Parish

El Dorado Chief Oil Co. has moved the rig and abandoned No. 1 McElwee, Section 13-22-7. It was at a total depth of 3,040 feet. Magnolia Petroleum Co.'s No. 1 Lee, Section 16-22-8, is in lime at 3,136 feet. Mitchell & Jansen are setting up a heavy rig for No. 1 Wilburn, Section 23-19-7.

DeSoto Parish

Bond & Evans have a derrick up for No. 1 Jones, Section 8-11-14. Craise & Hintze' No. 1 Riggs, Section 27-14-13, has been shut down at 3,251 feet. William Sebastian Syndicate is drilling chalk rock at 1,675 feet in No. 1 D. H. Sebastian. The Texas Company is drilling at 1,500 feet in No. A-12 Wemple, Section 2-12-12. The 10-inch plug was drilled out at 41 feet.

Franklin Parish

Hall & Harrell are arranging to set 6-inch casing at 2,120 feet in No. 1 Duncan, Section 20-13-7e. It has sand at 2,079-84 feet. Robinson and Long are drilling No. 1 Baker, Section 3-15-7e, at 1,453 feet.

Grant Parish

Gulf Refining Co. has abandoned as dry at 1,741 feet No. B-2 Swope, Section 12-9-1w, and also No. B-1 Swope at 1,763 feet. L. C. Swope has drilled out the 10-inch plug at 102 feet and now is at 1,351 feet in No. 1 Fee, Section 18-9-1e. Rue and associates are drilling at 1,700 feet in No. 1 Bliss & Williams, Section 10-7-4w.

LaSalle Parish

Tunica Petroleum Co. is drilling gray sand at 1,972 feet in No. 23 L. & A., Section 9-7-2e, and, in Section 6-8-3e is drilling rock at 1,856 feet in No. 25 L. & A.

Natchitoches Parish

Gulf Refining Co. is drilling at 735 feet in No. 1 Cobbie Hardaman, Section 9-7-7w. It drilled out the 12-inch plug at 68 feet. Ohio Oil Co. has set the 10-inch casing at 205 feet in No. 1 Thomas, Section 23-13-6w. H. O. Readheimer has cemented the 6-inch casing at 1,462 feet in No. 1 Wafer, Section 3-11-8. Tunica Petroleum Co. is drilling at 2,416 feet in No. 24 L. & A., Section 35-13-6w.

Red River Parish

Amerada Petroleum Corp. is drilling shale at 2,901 feet in No. 1 Long Bell, Section 5-13-9. Gulf Refining Co.'s No. 23 Kennedy, Section 24-13-11, is in chalk rock at 1,210 feet. No. 37 Robinson, Section 25, is in shale at 2,533 feet. Phillips Petroleum Co.'s No. 1 Long Bell, Section 16-12-8, is shut down for fuel at 2,410 feet.

Richland Parish

Gulf Refining Co. is setting 6⅝-inch casing at 2,312 feet in No. 2 Rhymes, Section 5-16-6e. The same company has set the 15½-inch casing at 130 feet in No. 2 Seibert, Section 11-16-5e. No. 1 Wayne L. & T. Co., Section 36-17-5e, is in gray sand at 2,654 feet. Because of a split joint of 6-inch casing, 4½-inch casing has been set with two packers at 2,427 feet in S. D. Hunter's No. 1 McCoy, Section 29-16-6e. It has been cemented between the two casings. The same operator's No. 1 Seibert, Section 1-16-5e, has been shut down at 2,358 feet. Helm and associates are rigging up for No. 1 Tensas, Section 10-14-5e. Louisiana Petroleum Co.'s No. 1 Binion & Sartor, Section 22-17-6e, is shut down at 2,474 feet. Harry E. Oliver and associates are making preperations to try to kill the gas and set casing in No. 1 Richard Hatch, Section 2-15-5e. Total depth is 2,316 feet. Ruston Drilling Co. drilled out the 12½-inch plug at 165 feet and is at 310 feet in No. 1 Earle, Section 5-16-6e. Stovall Drilling Co.'s No. 1 Mitchell, Section 20-17-6e, is shut down at 2,260 feet waiting on a new boiler. Texas-Louisiana Carbon Co. is drilling at 2,342 feet in black shale in No. 1 Broughton, Section 1-15-6e.

Sabine Parish

Ohio Oil Co. has abandoned as dry No. 1 Cook Land Co., Section 34-10-12. It is at 3,414 feet. Beckman & Freeman are drilling No. 1 Logan, Section 26-10-12, at 2,700 feet. L. M. Emlet's No. 7 Bowman, Section 14-7-14, tested 1,500,000 feet of gas with a showing of salt water at 2,420 feet. Total depth is 2,623 feet. Magnolia Petroleum Co. is rigging up No. 1 Hall, Section 33-10-12. Magnolia Petroleum Co.'s No. 1 La. L. L. L. Co., Section 11-6-11, is shut down at 3,252 feet Moffett and associates are drilling No. 1 Moore, Section 5-9-12, in sand rock at 2,372 feet. Woodley Petroleum Co. is building a derrick for No. 1 Robinson, Section 33-10-12.

Winn Parish

Humble Oil and Refining Co. has abandoned No. 20 L. & A., Section 27-10-2w, at 1,515 feet. Ohio Oil Co. is milling out casing at 4,457 feet in No. 2 Edenborn, Section 4-12-1w. M. M. Roark is drilling at 295 feet in No. 1 Southern Minerals Co., Section 19-11-3w. Standard Oil Co.'s No. 1 Tremont, Section 1-12-2w, is in hard lime at 3,717 feet.

ARKANSAS

Union County

Garrett Modisette Drilling Co.'s No. 1 Union Saw Mill Co., Section 7-18-13, tested salt water at 3,360 feet and is drilling at 3,588 feet in sticky shale. Simms Oil Co.'s No. 1 Ballard, Section 9-18-13, is pumping 300 bbls. of fluid, 98 per cent salt water, from sand at 2,556 feet. Marine Oil Co.'s No. A-2 Thompson, Section 10-18-13, tested salt water at 2,659 feet. The 6⅝-inch casing will be set at this depth. The No. B-1 Winn estate, same section, is waiting on a fishing tool to pull the line. Total depth is 2,691 feet. Rovenger Oil Corp.'s No. 1 McCain, Section 4-17-14, is being core drilled at 2,610 feet. Simms Oil Co. has started operations at No. 1 Crawford, Section 14-18-13. This test is at a depth of 595 feet. The 12½-inch plug was drilled out at 238 feet. The Superior Oil Corp.'s No. 2 Cordell, Section 5, tested salt water at 2,911 feet. It is being core drilled at 2,961 feet.

Ouachita County

J. G. Reynolds has cemented a short string of 4½-inch casing at 1,824 feet in No. 1 Chandler estate, Section 3-14-18, and will test 4 feet of sand at 1,833 feet.

Bradley County

Magnolia Petroleum Co. has abandoned No. 1 Arkansas Timber Co., Section 33-15-11. It was dry at 4,370 feet. Johnson & Adams are drilling at 1,635 feet in No. 1 Southern Timber Co., Section 12-12-12.

Clark County

Whelen Oil Co. is drilling at 1,127 feet in No. 1 Burrow, Section 35-10-20.

Columbia County

Columbia Oil Syndicate's No. 1 Whitehead, Section 14-19-23, has been shut down at 2,350 feet. Mitchell & Isles' No. 2 Bodcau, Section 4-20-21, tested fresh water at 1,000 feet.

Grant County

Jones & Watkins are waiting on a drill stem for No. 1 Meek, Section 5-4-11. Total depth is only 400 feet. Shaffer Oil & Refining Co. has a rig up for No. 1 Long Bell, Section 36-5-12.

Miller County

Lenz and associates are core drilling at 2,780 feet in No. 2 Dale, Section 28-15-26.

MRS. CHARLES DeHARTE DEAD

The death of Mrs. Charles DeHarte, widow of a veteran oil operator in the Bradford Field, occurred recently in Bradford, Pa. When her husband died Mrs. DeHarte took over the active administration of his oil properties and became recognized as a good oil producer. She visited the wells frequently, did her own buying of supplies and proved herself a woman of good business judgment. Mrs. DeHarte was the mother of Mrs. L. E. Mallory, Jr., and Mrs. Tom Wheeler of Bradford, and Lloyd DeHarte, who has worked and is well known in several eastern and Mid-Continent fields.

O. D. DONNELL IN TEXAS

O. D. Donnell of Lima, Ohio, president of the Ohio Oil Co., was in Rankin, Tex., recently in conference with Mid-Kansas Oil & Gas Co. officials. The Mid-Kansas is a subsidiary of Ohio Oil.

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One National Drilling Machine with complete string of tools and sufficient casing to drill a well 1,500 feet. Located in Van Buren County, Iowa. Address O. A. Carr, Box 1057, Tulsa, Okla.

SURPLUS ARMY SUPPLIES, Tents, folding cots, bunks, blankets, camp supplies, Hon Kong and khaki shirts, breeches, leather boots, springfield rifles, etc. We save you money. No order too large or small. Write for free catlog. If large buyer, state quantities for special prices. Army & Navy Supply Co., Box 1835, Dept. G, Richmond, Va.

FOR SALE—EQUIPMENT

FOR SALE

Two (2) Rathbun-Jones three-cylinder vertical gas engines, 12¾x15-inch, direct connected to 75-kilowatt, 250-volt direct current generator, with five panel slate switchboard, board equipment, including two watt hour meters, volt meters and ammeters, generator switches and distribution panel.
All equipment in first-class condition, now in operation. Must move in 30 days.

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Dayton, Ohio.

LUCEY-REX drilling machine, new, $5,000, cost $46,000. Prim Oil Engine $1,000. Box 653. Kansas City, Mo.

FOR SALE
Five Deane Triplex pumps, 5x8.
One No. 5, 1 No. 9, 1 No. 11 Sweetland oil filters.
Two 10-inch S. Roturbo cetnrifugal pumps.
Six 10-inch S centrifugal pumps, steam turbine.
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Send us your inquiries for items not listed. We buy your idle equipment.
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CONSOLIDATED PRODUCTS CO.,
15 Park Row, New York City.
Barclay 0603.

FOR SALE

Ingersoll-Rand Type P. O. Oil Engine. Bore 17, stroke 19. Also Imperial Type, two-stage Compressor and all tools, building and complete gas lift Pumping Plant. Inventory value better than $16,000. Price $7,000 cash, at present location, Independence, Kans. Write C. G. Chandler, care of Wirt Company, 5221 Greene Street, Germantown, Philadelphia, Pa.

A RARE bargain if you want to go in the pipe business. Entire equipment, machinery, tools, truck, trailer, supplies and stock for $2,500. Excellent location, cheap rent. Write Box 839, Wichita Falls, Tex.

MANUFACTURING MACHINISTS
CRAGO CUT GEARS

Worthy of your confidence. General machine work. 1416 Walnut, Kansas City, Mo. Phone Harrison 7660.

MACHINE WORK — Foundry products; let us figure on the manufacture of your equipment. First-class service. Reasonable prices. Prompt deliveries. Large establishment.
GENERAL ENGINEERING & MFG. CO.
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BUSINESS OPPORTUNITY

80 ACRES farm land, 25 miles from Waldron; has farm house and other buildings together with other improvements; good locality and easily accessible; part in cultivation and balance in meadow and pasture; splendid stock farm; price $1,700. Will take good car as part payment or will handle part terms. M. C. Bird, Box 124, Waldron, Ark.

FOR SALE
Have lease contracts on 4,000 acres, Joplin, Picher, Lead & Zinc District. Low Royalty. No Money required except for development. Will assign all or any part on liberal development requirements.
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Box 365. Columbus. Kan.

FOR Complimentary copy of "The Promoters' Handbook" a leaflet on financing, write to Amster Leonard, 617 Central Ave., East Orange, N. J.

BUSINESS OPPORTUNITY

ATTENTION
MANUFACTURERS

Are you looking for factory representation in the Mid-Continent Field?
We want two or three good lines to go with our own manufactured product that is handled by more than 300 supply stores We have the sales organization and are financially responsible.
J. E. SHAFFER COMPANY,
316 Mid-Continent Bldg., Tulsa, Okla.

CAPITAL — Experienced dependable broker with following will give personal attention to financing worthwhile proposition. B. W., 810 Broad St., Newark, N. J.

OIL MEN AND BROKERS—I can supply photos of activity in Pecos, Crane, Ector, Winkler and surrounding counties. Field views, wildcats, townsites, anything. Jack Nolan, Oil Field Photographer, Odessa, Tex.

WILL INVEST $2,500 and services in good paying business. Full particulars essential in first letter. Box B-801, The Oil and Gas Journal, Tulsa, Okla.

NEW MEXICO OIL LAWS—Revised edition containing New Legislation and New State Land Office Rules now ready. Price $1. Staplin & Staplin, Santa Fe, N. Mex.

FINANCE your project with stock bonded. Quickest and most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

FOR SALE or rent, Elegantly furnished cabin, large sleeping porches, piano, sun parlor, fireplace, telephone. fine spring water, situated in forest of pines, over wonderful roads; Cody Park, near clubhouse, 45 minutes from Denver. Owner, 670 Grant St., Denver, Colo.

NOTICE—Will give one third interest in 3,000 acres of leases, to any one that will furnish me $5,000 to finish my well. The well is down 830 feet, went through oil sand at 687 feet. If I don't get oil, will deed them 40 acres of land, and one number 30 special Spotter tractor rig, with tools. S. Stephens, Box 512, Bushnell, Florida.

FREE DRILLING contracts in Dawson and Cochran Counties, Texas. W. J. Williams, Box 235, Plainview, Tex.

WANTED—Specialties to sell or manufacture for drilling operations in Mid-Continent Field, by company already successfully marketing such products. Address Box B-772, The Oil and Gas Journal, Tulsa, Okla.

WANTED

WANTED—To purchase substantial interest in drilling well, including divided or undivided interest in acreage surrounding same; also good drilling blocks. Must be on recognized geology and in good area. Address George Bradley, Tulsa, Okla. P. O. Box 3363.

WANTED—$10,000 loan for three to five years period, on good security, at legal interest rate, perhaps with bonus each year, for purpose of buying high-grade, settled Oklahoma production, appraised about $20,000 value. Box B-800, The Oil and Gas Journal, Tulsa, Okla.

WANTED TO BUY—Run down producing properties. Must be bargain. Will pay cash. Duncan, 402 Central National Bank Bldg., Tulsa, Okla. Phone 3-7543.

WANT to buy producing royalty. Oklahoma or Texas preferred. Must stand strict investigation and be real bargain. $25,00 to $35,000. A. H. Livingston, Box 1214. Muskogee, Okla.

ROYALTIES WANTED — Producing, offset or under drilling wells. Give description, price, age and full particulars. Box 1359, Tulsa, Okla.

WANT to drill well on 5,000 acres, good structure, vicinity Cherokee County, Texas. Want those who can invest $100 to $1,000. Send no money but write for particulars on ground floor proposition with big possibilities. P. O. Box 337, El Paso, Tex.

ROYALTIES WANTED—Producing-offset, and under drilling wells; also producing properties and leases. J. Ben Brown, 115 North Vancouver St., Tulsa.

WANTED

WANTED—Drilling contractor to drill on twenty acre lease, one half mile west of Wilcox production in the Earlsboro field. Address, Box 255, Earlsboro, Okla.

WOULD like to hear from party with good business for sale; state price and terms; all correspondence confidential. Fuller Land Man. Wichita, Kans.

WANTED—Ten to 20 bbls. of settled production, royalty preferred. Or will purchase part interest in larger lease. Address P. O. Box 146, Litchfield, Ill.

WANTED from owner, good producing property with sufficient proven acreage for further development. A. B. Head, 418 West Bldg., Houston, Tex.

WANTED—WET GAS CONTRACTS
Gasoline producer will give interest in plant or overriding royalty. Give volume and gasoline content. Wm. H. Allen, contract dept., 1215 Detwiler Bldg., Los Angeles, Calif.

WANT producing royalties if priced right. Richard Hill, 813 E. Haskell, Tulsa.

POSITION WANTED

YOUNG Petroleum Engineer employed by one of leading oil companies. Two years practice as roustabout, pumper, work in gasoline plant and eight months pipe line experience, after graduation wishes a change. Box B-803, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Position as auditor, and traffic manager with responsible corporation by young man with executive experience, having seven years service as general auditor and traffic manager of a group of railroad corporations, five years with government as examiner of accounts. Extensive income tax experience. Married, now employed. Best references. Box B-802, The Oil and Gas Journal, Tulsa, Okla.

COMPETENT CONSTRUCTION engineer with university education and 10 years oil refinery construction experience erecting modern refinery equipment, pipe still, cracking plants, lubricating plants, etc. Foreign work preferred. Box B-792, The Oil and Gas Journal, Tulsa, Okla.

PENNA. MAN with good education and 26 years experience wants charge of construction or production. Ten years rig building and general lease construction and 16 years production in East and Mid-Continent Fields. 44 years of age; family; will go anywhere. Best of references. Box B-790, The Oil and Gas Journal, Tulsa, Okla.

SALES ENGINEER—Six years mechanical engineering and three years' selling experience, open for position. Box B-780, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

Eastern Manufacturer Desires

SALES REPRESENTATIVE

To call on Refineries through-out the country, with a high quality, well known, nationally advertised Specialty line. Must be a high class man, who can produce results. Reply in detail first letter giving age, references, experience, salary, etc.

BOX B-795,
The Oil and Gas Journal,
Tulsa, Okla.

WANTED—Salesmen to sell stock in an operating company. Cash commission. Eddy-Farris Oil Co., Marysville, Kans.

INCORPORATIONS

CHARTERS — Deleware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

DELAWARE incorporators. Charters fees small, forms. Charles G. Guyer, 901 Orange St., Wilmington, Del.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

ROYALTIES—PRODUCTION

FOR SALE—One-sixty-fourth royalty interest on 120 acres on the C. E. Cover B farm in Okmulgee County, Okla. I. C. Huff, Hooker, Okla.

J. F. MARION OIL COMPANY
Magnolia Building
Dallas, Texas
Buys and sells Texas Oil Leases and Royalties.

FOR SALE—One-sixtieth interest in 100-acre lease which has 40,000,000-cubic foot gas well and three possible producing sands on it. Priced for quick sale as additional pipe line facilities will double price in two months. W. R. Wight, Box 203, Hebbronville, Tex.

ROYALTY for sale; the lease rental alone will net 6 to 11 per cent. Can you beat that? Murray Sells, Muskogee, Okla.

WE OFFER an unusually attractive and unique proposition to purchase royalty interests. Superior Oil Royalty Co., Lubbock, Tex.

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Under wells drilling on good structure. Small or large interests. Fifty dollars or more; deed direct to buyer.
L. B. SEIDLER
819 Oliver-Eakle Bldg,
Amarillo, Tex.

FOR SALE—Part of royalties on 71½ acres, northeastern part Fayette County. A. Baker League. Write A. H. Becker, Jr., Route No. 2, Box 65, Carmine, Tex.

OIL LEASES and royalties, Ector, Crane, Pecos, Reeves, Ward, Upton and Winkler Counties; buy or sell. C. H. C. Anderson, 712 Linz Bldg., Dallas, Tex.

LEASES—PRODUCTION

140 ACRE lease, 2 producing wells, no dry holes. Priced to sell. Greenwood County, Kans. Andrew Miller, Bitting Bldg., Wichita, Kans.

LAREDO
Three gas lines are now taking gas from this district. I have some attractive buys in oil and gas properties—leases, royalties, drilling blocks and wildcat acreage.
M. ELDER & CO.,
Hamilton Hotel, Laredo, Tex.

SOUTHEAST NEW MEXICO
Can furnish practically proven leases in Artesia Field, Eddy County. Also other tracts in Eddy, Chaves and Lea Counties. Particulars on request.
H. T. ORCUTT
1114 Colcord Bldg., Oklahoma City, Okla.

ARE YOU GETTING in on the next big Oil Field in Texas? Four wells to be drilled this year, within 50 miles of Fort Worth. Ask R. B. McIlroy of P. O. Box 18, Grandury, Hood County, and he will tell you about it.

RATLIFF & CO.
Oil leases and royalties. 630 and 631 Security Bldg. Phone W. 7881, Oklahoma City, Okla.

FOR SALE—Selected oil and gas leases adjoining producing and drilling leases in Barren County, Kentucky. Prices right. L. W. Preston, Glasgow, Ky.

HAVE SEVERAL pieces of flush and settled production for sale in Oklahoma and Wichita Falls districts. Prices reasonable and terms can be arranged if necessary. P. O. Box 1144, Dallas, Tex.

NEW OIL FIELD. Shallow drilling, one well standing full of oil, one well now drilling, several new well locations made. Will sell a few leases at $3 to $5 per acre. P. O. Box 96, Bossier City, La.

DRILLING BLOCK secured on approved acreage and well supervised; no bonus; we keep some acreage as fee. Nicolle, Petroleum Geologists and Operators, Box 1720, Fort Worth, Tex.

SOUTHWEST TEXAS — WINKLER, Loving, Reeves, Ward, Pecos, Culberson Counties.
Drilling blocks. Leases. Royalties.
Ranches in fee.
H. F. Anthony, Pecos, Tex.

LEASES—PRODUCTION

FOR SALE—Ten year leases, fifty cents rental, in Alfalfa County, Okla. Write for list. Mansfield & Brakey, Cherokee, Okla.

OPERATORS—Will block 5 yr. form 88 leases Montgomery County, Mississippi, 2 yrs. free, 25c rent next 3 yrs. at 5c acre. Brooks, 282 S. Front St., Memphis, Tenn.

FOR SALE—Oil leases in Cimarron, Texas. Beaver and Woods counties. Orbee Lease Co., 1114 Colcord Bldg., Oklahoma City, Okla.

FOR SALE—Leases and production in Warren, Allen and Barren Counties. Have leases in Barren County joining producing leases and some within half-mile to 1 mile of production. W. P. Harley, Bowling Green, Ky.

"IN THE TREND"
Southeastern New Mexico and west Texas counties—Lea, Eddy, Chaves, Gaines, Andrews, Winkler, Loving, Ward, Culberson and Pecos Counties, oil and gas leases, royalties and drilling blocks. We buy and sell. F. S. Blackmar, P. O. Box 541, Roswell, N. Mex.

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9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

(Six words usually make a line.)

Compute white space at the above rates. Mail your advertisement to

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma.

FOR LEASE—80 acres near Sunny Side, Idaho. It is claimed a large anticline comes through where this land is. Wm. Burger, 4761 Milentz Ave., St. Louis, Mo.

CATTLE and King County leases, royalties and drilling blocks. Many locations, much drilling. R. D. Jones, Paducah, Texas.

FOR SALE—Good oil lease of several hundred acres, very near Walden well of Jackson County, Colorado. Only parties with reliable references considered. Box B-804, The Oil and Gas Journal, Tulsa, Okla.

NOW is the time to buy cheap, well-located leases, drilling blocks, royalties and mineral fee in west Texas. I can supply your wants. Have had four years' experience in this area in land department for major companies and two years for myself.
G. H. AMERY
515 Rust Bldg., San Angelo, Tex.

AMARILLO PANHANDLE OIL FIELD
Underwriter Brainard Ranch oil and gas leases, 25,000 acres in Hutchinson County. Hutchinson County is the major producing area. New 5-year leases from 20 acres to 160 acres. Bought right, can sell at reasonable price per acre. Write for map and prices. I have handled, as underwriter, over 60,000 acres in the field on which over 80 wells are now drilling or producing. Ed R. Mayer, Amarillo Hotel Bldg., P. O. Box 1186, Amarillo, Tex.

LEASES—PRODUCTION

HUNDRED barrels settled, shallow, Oklahoma production. Large acreage, sure locations. Box 1629, Tulsa, Okla.

I AM going to drill a well in Pecos County, Texas, about 9 miles southwest of the large discovery well on a block that I secured last fall. Good geology and wish to dispose of some acreage. L. R. Kershaw, Muskogee, Okla.

FOR SALE—Ten-year leases and one-half perpetual royalties in Kiowa, Blaine, Custer and Roger Mills Counties, Oklahoma. Price $2.50 per acre to $4. Abstracts furnished. Chaffee & Co., 500 Equity Bldg., Oklahoma City, Okla.

LEASES FOR SALE
Howard County is producing the oil; also there are 20 wildcat drilling blocks already assembled mostly by major companies. Eighty-five per cent of the county under lease. I have something like 12,000 acres, 10-year leases. A general spread over the county. Can offer these leases at reasonable price. Would like to sell to some reliable company who wants protection around these blocks. Wire or write R. L. Cook, Big Spring, Tex.

FOR SALE—Oil lease, 2 miles from production. Wells now drilling in different directions from lease, and another may start drilling soon within 1 mile of this lease. $5 an acre if taken now. Write for map. F. C. Purdy, Sterling, Kans.

STRUCK OIL!
Have some good bargains in farms and ranches in fee. Good leases in blocks from 4 to 12,000 acres each. Also good royalty. Offer 1,040 acres in Twp. 29n, R. 35e, New Mexico, 10-year lease and one-half royalty $2 per acre. Write or wire H. H. Errett, Clayton, N. Mex.

LOVING COUNTY TEXAS. Will sell lease and fee or lease only on all or part hundred and sixty acres close to flowing oil well. Write Geo. Young, Suite 515, Hartford, Bldg., Chicago, Ill.

BLOCKS taken for bonafide operators in Miami and Franklin County. Production for sale. Clarence H. Chambers, Osawatomie, Kansas.

FOR SALE or lease, NW ¼ of Section 10, Township 9n, Range 79w, Jackson County, Colorado. Clear title and United States patent. 1½ miles west of the Continental Oil Co. well.
H. S. EVERTS, Owner
731 W. Broadway, San Diego, Calif.

LEASES, drilling blocks, royalties, West Texas for sale. Green & Hines, Box 1303, Abilene, Tex.

IF YOU WANT TO BUY
Oil leases, royalties, acreage in fee, or a drilling contract, anywhere in the Big Bend district of Texas, write or wire.
JOHN CHRISTIE & CO.
Investment Brokers
Alpine, Tex.

OHIO COUNTY, KENTUCKY
Acreage for sale, close to producers and drilling wells. Best play in Kentucky.
G. Taylor Yewell, Owensboro, Ky.

ARKANSAS and Mississippi leases and royalties near drilling wells. Any size tracts. Get my prices. Maps free. Drilling blocks handled. W. A. Feild, 905 W. 13th St., Little Rock, Ark.

I HAVE 3,200 acres oil leases, Lynn County, Texas, will give driller 6/8. Russell Smith, Fairfield, Iowa.

$5.00 An acre.

"Can You Beat It!"

GREENWOOD COUNTY, KANSAS.
Several producing wells ¾ to 1 mile South. Must sell. Price tells the story. 80 acre oil lease. Runs until April 1932. Rental paid up to April 1928. S ½ N. E. ¼. Sec. 9, Twp. 24, R. 13. J. E. Greeley, 341 St. Peter St., St. Paul, Minn.

215 ACRES, Sec. 7-6n-2w, McClain County, Oklahoma. New 10-year lease; abstract furnished; $4 acre. Fee owner, Box 1, Oklahoma City, Okla.

LEASES—PRODUCTION

C. W. REYNOLDS Realty Co., Stratford, Tex., has several attractive leases for sale. Also some fine land in Sherman County, Texas.

CUBA—Producers, investigate our oil resources! Present production sells to local refinery at $5 per barrel. Offer large drilling block with structure and seeps. Adjoins production. Promotion propositions not wanted. R. G. Lane, P. O. Box 1066, Havana, Cuba.

FOR LEASE—Large drilling block for a test well in Butler County, Kansas. Good structure and in line of production. D. A. Bisagno, Augusta, Kansas.

PATENT ATTORNEYS

PATENT-SENSE — Valuable book (free) for inventors seeking largest deserved profits. References include prominent oil men. Lacey & Lacey, 718 F St., Washington, D. C. Established 1869.

CLASSIFIED advetisements in this section do pay well in money and in extended business relations. This has been proven by the continual advertising that we receive from the men in the oil industry, everywhere.

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Before disclosing your invention to anyone, send for blank form.
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Bulletin "How to Establish Your Rights" and complete information free.
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FOR SALE—DOGS

FOR SALE — Beautiful grown male and female Boston Terriers. Female Pekingese, 4 months. All Pedigreed, reasonably priced. Honor Bright Kennels, Deerfield, Ill.

FOR SALE — Llewellyn and English setters also rabbit hounds on trial, phamphlets free. O. K. Kennels, Marydel, Md.

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EXTEND your business in the oil industry by advertising in the Classified Wants Section of The Oil and Gas Journal.

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We are prepared to furnish from stock standard forms of gas meter Consumers' Ledgers. Sample forms and quotations on request. First-class material and workmanship.
DERRICK PUBLISHING CO.
Oil City, Pa.

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DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 131 E. 13th, Oklahoma City, Okla.

RAISE CAPITAL
Through sale of securities in your corporation. Worthy enterprises only. Twenty-five years experience. Highest references.
NORTHCLIFF
25 West Forthy-Third New York

ADDRESSES WANTED

WANTED—The address of Harry Rhodabarger. Address Box 1122, Henryetta, Okla.

Larger Demand in Chicago District

Continued Fine Weather Increasing Consumption, May Exhaust Jobbers' Supplies. Price Situation Unchanged

By J. B. Waldo

CHICAGO, Apr. 11.—The fine weather here over the week-end and the large number of cars that were out encouraged the oil men to believe that there would be a larger demand for gasoline. The early business on Monday was light and for the most part consisted of single cars, all of which were wanted shipped at once. There will be many distributors in the city for the A. O. M. A. convention which opens tomorrow and many appointments have been made which it is expected will result in business. There was no change in the price situation and there continued to be a wide range of prices with the bulk of the orders for U. S. Motors placed at 6½ cents. It is significant that one large buyer who places weekly orders quoted 6¼ cents this week and last for his needs. There was no change in the higher tests or natural gasoline from the close of last week.

Kerosene Drops

Kerosene was quoted at 4½ cents, one large refiner dropping his price to that amount this morning. This was not the bottom of the market as others quoted an eighth and in a few cases to special accounts a quarter less. The market for this product seemed less strong.

Distillates, gas oil and fuel oil were all very dull and shading of previous quotations continues.

Reports received from several distributing companies in the vicinity of the city and from a few more distant points indicate that the consumption of gasoline over the week-end was large and a continuance of this business over April is expected to bring about a more active buying of gasoline as it will hasten the depletion of the country supplies.

One important refiner of lubricating oils reports their March sales to distributors as the best in their record and nearly 20 per cent ahead of March a year ago.

March Gallonage Larger

Reports now available of the March gallonage of large and small companies operating in this territory show that the business done in gasoline last month was decidedly larger than for the same month a year ago. The increases will average around 25 per cent judging from a number of reports at hand. It must be considered that March last year was a very bad month as to weather and exceptionally good this year. Of course the roads in the country districts have been bad this season but the fine weather has made it pleasant to use the cars freely wherever a good pavement was available. While the percentage of increase over last year is large the additional gallonage over an average season would represent a healthy growth in gasoline consumption. It is nothing like the consumption of say July or August and refiners should realize that even the present large seasonable consumption will not tax their capacity.

Spot Market Quiet

The gasoline consumption, however good it may be, especially as compared with last year at this time, has not yet brought about any resumption of the buying movement and the spot market was very quiet all of last week. Refiners and marketers found that it was a waste of time and money to use the ordinary methods of securing spot business and the telephones were very inactive by comparison. It is in this fact, that so many of the distributors and especially such a percentage of those who have a large gallonage are supplied for at least the remainder of the month, that the weakness of the situation is to be found. The number of refiners who cut loose and sold freely during the recent selling movement was only a small part of the total list and the consequence is that there are quite a number of refiners, some of them of large capacity who are not sold ahead to any great extent while only a few are cared for so far as any need of additional business is concerned for 30 to 60 days. One refiner is stated to be several hundred cars behind on his shipments to date while others, even larger, are very anxious for some immediate orders. Several of these have reduced their runs materially and others are closing down temporarily as the distributors are in no condition to absorb any great volume of gasoline for this month at least so that the immediate outlook is for a quiet market, a condition brought about by the unloading of refiners with a large volume of gasoline which they had run under the belief that they would be relieved by the usual operation of the demand. One thing has been lacking that is quite commonly depended on and that is the export business the result of which is practically to increase the volume of gasoline to be offered for consumption in this country.

Little Price Change

During last week there was little change in the price situation except for the gradual easing of the market. At the beginning of the week the average range was from 6½ to 6¾ cents with a very little available at the quater cent. At the close of the week most of the refiners, in fact all who wanted business, were down to 6½ cents while there was plenty of gasoline with full U. S. Motor specification to be had at 6¼ cents. Occasionally a sale was claimed to have been heard of as being made at less than the low price mentioned but if there was any of this selling it was infrequent and for special reasons.

Of course the Ohio territory must be excepted as the price of the Standard Oil Co. of Ohio, in tank cars was on the basis of 6¼ cents and the Atlantic Refining Co., offered U. S. Motor gasoline at 9 cents out of either Pittsburgh or Franklin which with the freight differential adjusted would make a 6-cent price in eastern Ohio where the freight was not over 1 cent from either Pittsburgh or Franklin. There are quite a number of marketers who are long on April gasoline bought at prices ranging from 5⅞ cents up to 6¼ cents and until they are sold out of this cheap gasoline the market will hardly be above 6½ cents with a tendency to drop to 6¼ cents if the demand is not active. There has been very little buying of the higher tests and prices were a little lower at the close of last week than at the beginning. Anti-knock gasolines of various makes and brands are popular and move better than the regular grades even at the increased price while a new product just put on the market to sell at the regular station price is reported by its makers to be going to capacity of the plant. There have been a few small inquiries for export and at the close of last week there was one inquiry for 2,500,000 gallons of 60-62-400 endpoint. There has been no real activity in natural gasoline here but Grade C natural gasoline has been advanced one-half cent from the field on large business done in that grade with the Sinclair Refining Co. large buyers. While many jobbers do not like the so-called blended gasoline they continue to be offered and add greatly to the variety of lists of quotations.

Kerosene Weak

Kerosene has been quiet and weak in price with the demand so long deferred. The market closed an uneventful week with quotations a quarter of a cent lower than at the opening. There are several refiners who admit they have stocks they would like to move and they are not finding it easy to reduce their inventory in this commodity. While the majority of refiners and marketers believe there is yet to be some increase in the demand jobbers are not willing to stock up to any extent at least right now and as the refiners are anxious to sell, the market has eased off until at the close 4½ cents was a generally named price to dealers.

Distillates Dull

Distillates are barely moving, if that, and the season may be called a closed incident in the industry until next fall. Any jobber who wanted a car of 38-40 straw could supply his needs at 3½ cents and for the 36-40 a good price would be 3¼ cents. The feature of the oil burner season so far as the domestic user of fuel oil was concerned was the substitution of gas oil for distillates. The fact that the average oil burner would and did burn this type of fuel successfully is promising for the growth of the domestic industry. It provides a wider source of supply and this in the long run will mean a more stable cost for home heating with oil. The industry seems to be partly if not largely through the experimental stage and can now offer its product with some authority both as to the proven success of oil burning for home heating and an established cost for operation. It will be unnecessary for the seller of a burner to plead ignorance of costs to operate.

Fuel Oil Slow

Fuel oil continues to be slow to sell and the tone of the market even before the cut in crude was easy. There has been a really remarkably small business doing. One of the oldest and best known fuel oil salesmen in this city says he spent a day among the steel companies and other large industrial users of fuel, was pleasantly received but, "What did I get? Just a few scattering cars." Concerns that have been trying to push up their sales by sending out offers at what were certainly attractive prices have received many acknowledgements of their courtesy but few orders and in no case has the result been worth while. The users have stated that they were not buying or not interested at present or some similar statement but they have not ordered. Some of them have stocks but few of these supplies are large. One dealer who has very recently returned from a trip through a number of manufacturing centers reports that the industrial companies have large coal stocks but very little oil. However, they do not intend to increase these supplies at present so far as he could learn.

The coal strike is not going to have any material affect on the sale of fuel oil for some months. Say three months from now if there has been no resumption of mining by the union miners and the output of the non-union mines is not increased there will be a gradual development that will be favorable to a larger consumption of fuel oil. Until then except in the case of some exceptional industries there will be little change to the demand because of the strike.

Prices Well Held

All things considered the price of fuel oils has been well maintained up to the present. Some of the weakness shown in certain grades is because these particular grades have not proved satisfactory in use and are being gradually discarded for better, cleaner oil. There has been a great deal of complaint regarding the carbon and other undesirable content of some of the heavy oils and several contracts have been cancelled here that called for large quantities of these heavy oils simply because they gave the plant engineers too much trouble. In some cases the trouble has been simply due to want of a real attempt to burn the heavy oil. Plants have shifted from a 24-26 straight run to a 14-16 cracked fuel oil and expected to do this with no change in operating conditions or equipment. In one case a plant engineer reported that the use of a certain heavy product had been a real life saver to his plant. He stated that his people had expected they would have trouble at the start but that after the first 30 days they had burnt the oil successfully. A nearby plant had experimented with the same fuel and gave it up after a brief test. The same lines, preheating system and burners that will burn a 24-26 fuel oil will not work successfully with a really heavy oil and if the management of the plant makes only a half hearted attempt to use the heavy oil it will find it troublesome and expensive.

It is considered as certain that there will be more of the better fuel oil available with lower cost crude and less cracking and in some cases right now dealers in fuel oil are shipping their regular customers a better oil than the contract calls for. In cases cars of gas oil have been shipped on contracts for 18 gravity oil and the buyer told that by mixing this in his tank with any remainders of his fuel oil he would cut the latter and make it possible to clean his tank nicely. In fact the price of dark gas oil is really lower than the contract price of a fuel oil and in many cases the gas oil is being shipped on these contracts, the former costing at the refinery not over $1.15 a barrel and the latter $1.25 a barrel.

Declines Much Less

In such a market as prevails at present with so many freakish quotations in fractions and even decimals it is difficult to establish an average but the declines shown by prevailing prices are much less on the fuel oils than the other products. The 24-26 gravity has held best of all and shows a decline during the past 60 days of 13½ cents a barrel or just about 10 per cent. The market last week on this grade ranged from $1.12½ to $1.15 to the trade with some short selling at less but the cost to buy was fairly steady if not firm at $1.10. Compare these reductions with the prices on gasoline and other light products and it will be seen that fuel oil has held much better than the lighter products. The Smackover product is selling at $1.17½ to $1.20. The production of the heavy oil has shown little change but the demands are decreasing both for fuel oil by industrial plants and for cracking. Some oil is now being stored by refiners with production. While the fuel oil market is claimed to have reflected the decline in crude in advance of its posting, buyers are looking for lower prices, one, a dealer in fuel oil stating that his buying price was not over 90 cents for a good grade of 16-18 fuel oil. He expected to be able to cover his sales at that price.

Gas Oil a Full

There has been so little demand for gas oil that the market is called dead by many dealers and the frequent inquiry is if any one is selling any gas oil. As previously stated a good deal of gas oil is being shipped out on fuel oil contracts simply because it pays better to do this than to hold the gas oil and buy fuel oil. Some of the largest users, like

large gas companies, have bought directly at prices which at the time the purchase was made seemed well under the market and are what might be called a fair average price today. They are filled up for 60 or 90 days, some for a longer period. Then there is little or no demand for cracking. Refiners may run their own gas oil but they are not buying freely to crack now and of course the demand for burner oil is at a low level. Some purchases are being made for Diesel engine oil but these are not of much importance in reducing the stocks on hand. Sales to dealers have been reported as low as 2⅝ cents out of Group 3 from both the Group and North Texas. One of these sales was an oil regularly sold as a 31-33 gravity oil but it was guaranteed to run better than 32 degrees gravity. For a single car or so of straight straw gas oil a small premium would be charged but even for this grade 3⅛ cents is the top.

Lubs Quiet

The sellers of lubricating oils report that they are now receiving shipping instructions in larger volumes. These instructions are against previous orders. The new business is rather limited right now and the market quiet. The active competition is having the result of enabling buyers to secure prices that are below the regular lists. This may be due in part to anticipation of further reductions in crude. Some refiners with a well established brand are able to secure their price but generally there is great complaint of concessions for business. The consumption is good at least for the season but there are a considerable number of new producers of a more or less complete line of lubricating oils. And even now refiners are planning to add lubricating departments.

Tank Wagon Speculation

There was a great deal of speculation all of last week regarding the tank wagon scale in this territory. Not only was crude reduced but the tank wagon prices were freely slashed by the large eastern companies. There is however little comparison between this territory and that east of the Allegheny Mountains. The eastern coast is capable of absorbing but a share of the output of the large refiners who serve that territory. A large part of the output of the Standard Oil Co. of New Jersey for example has always been exported. Right now this export business is reduced by both foreign and West Coast competition ,ot say nothing of the competition from the other refiners along the Atlantic Coast. There is a keener competition there than in the West, keen as the competition seems to be here. The result is that price changes are more numerous along the Atlantic Coast than in the Middle West. There is really a minimum of price disturbance in this terrtory and this is the more remarkable when the wide margin between the refinery price and the station price is considered. This may be in part due to the fact that the demands of the large buyer of gasoline for a lower rate than the established one is met by the recognized quantity accounts over the territory. The general assumption is that another crude reduction in the Mid-Continent Field will be followed by a tank wagon change but there is nothing positive about this.

AMERICAN GAS ELECTION

American Gas Co., controlled by United Gas Improvement Co., has voted amendment to certificate of incorporation reducing the board of directors from 12 to 5. Following former directors were re-elected: Arthur W. Thompson, Samuel T. Bodine, W. W. Bodine, Morris W. Stroud and Edward B. Robinette.

PURE OIL TEXAS OFFICES

The Pure Oil Co. will move its general offices in Texas from Mexia to Fort Worth. B. S. So Relle is general manager of the company's operations in Texas and Louisiana.

EASTERN MARKETS GENERALLY WEAK EXCEPT GAS OIL AND FUEL OIL

By N. O. Fanning

NEW YORK, Apr. 11.—The eastern refined oil markets generally present a very weak tone in practically all departments with the possible exception of gas oil and fuel oil. Additional reductions in the price of crude have caused considerable uncertainty, and buyers show a tendency to hold off anticipating lower prices for refined products.

The Standard Oil Co. of New Jersey reduced the price of gasoline 1 cent a gallon, tank-wagon basis, throughout its territory, with the exception of South Carolina, where the market was reduced 2 cents a gallon. This cut was made effective April 6.

The Standard Oil Co. of New York has reduced tank-wagon prices locally in some sections, but has made no general reduction. A general cut of 2 cents a gallon is expected any day, however. In Rochester, it is said all leading marketers are selling gasoline for 17 cents, tank-wagon basis. Gasoline is selling retail in that city for as low as 14 cents a gallon.

Leaders here are looking for lower prices for nearly all refined products in the near future, unless production takes a definitely downward trend, or consumption increases unexpectedly. Weather conditions during the past week have been somewhat unfavorable, and therefore gasoline demand has been a little less than normal. This has aggravated the situation somewhat. Leading refiners are willing to sell U. S. Motor gasoline for as little as 9½ cents a gallon, with unconfirmed reports placing some sales as low as 9 cents.

It is evidently the policy of the larger refining units on the Atlantic Coast to meet all competition in the gasoline and kerosene markets. As a result, it is understood much material is being moved at prices representing a loss to refiners. That the situation is dangerous goes without saying, inasmuch as the tendency to sell below cost places no limit on the downward trend.

It cannot be denied, however, that the consumption of gasoline is showing a material gain this year over last. Any marked degree of curtailment, therefore, should mean ultimate relief to the situation. Until distress gasoline is off the market, however, the law of supply and demand will probably be ignored.

It is interesting to note that the current prices of U. S. Motor gasoline on the Atlantic Coast is out of line with Mid-Continent refinery prices. This is another proof that present prices are bringing losses to someone. At 9½ cents at Bayonne, U. S. Motor gasoline in the Mid-Continent should sell at about 5¼ cents on a competitive basis, allowing for intervening freight charges.

Kerosene Also Weak

The kerosene market is also showing signs of recession on the Atlantic Coast. Cut-rate tank-wagon prices are evident in many big consuming centers. Although the demand is said to be good, the unfavorable export situation is credited with leaving a great deal of surplus material to be forced on the domestic market.

Gas and Fuel Oil

Gas oil is firm at 6 cents a gallon, with no immediate change indicated. It is considered possible, however, that the curtailment of "cracking" operations will release considerable gas oil, and that the price may consequently weaken.

Diesel oil is in good demand, with the price maintained at $2.40 a barrel at New York. The trend in demand is still upward, and there appears to be no pressure to sell.

Bunker fuel oil is also in fairly good demand, but some consumers indicate a belief that prices are too high, and one big user has actually threatened to convert partly back to coal. It is doubtful whether bunker fuel oil can continue at the current price without hurting consumption somewhat. The fact that oil prices in almost all other departments are weak has caused many shipping companies to seek for cheaper fuel oil, and it is possible that they may ultimately get it.

There is somewhat of a shortage of bunker fuel oil however. This is due to the situation in Mexico. Receipts of California fuel oil have decreased, also. Venezuela is looked upon as a potential source which may offset declines elsewhere.

Lubricating Oil

The motor and industrial demand for lubricating oils continues good, with prices holding fairly well. Cylinder oils, particularly, are moving briskly. Red and pale oils are somewhat weak.

The domestic demand for paraffin wax is said to be holding up very well. The excessive production and falling off in exports are the main causes of the present weak price situation.

Petrolatums are in good demand. A concession of one-eighth cent is recorded in snow white, but other grades are unchanged in price.

Export Situation

The New York export movement of oil products is still below normal. All departments seem to be affected.

Exporters here say that the Chinese situation has seriously hurt the export kerosene and wax trade. New York has felt this especially, because a large part of the exports of cased kerosene to China have been handled here. The wax export trade is also handled largely from this end.

During the week ended April 6, exports of gasoline in bulk amounted to 3,335,000 gallons. There were not bulk shipments of kerosene or lubricating oil.

Paraffin wax exports to Europe picked up considerably, but this, of course, has not offset the decline in shipments to China. In fact, exports to Europe of wax have been below normal since January.

The following table shows principal exports of petroleum and petroleum products from New York during the last three weeks (all figures in gallons unless otherwise noted):

	Week Ended		
Gasoline:	Apr. 6	Mar. 30	Mar. 23
Bulk	3,335,346	.....	1,815,744
Cases	732,990	105,000	1,199,500
Kerosene:			
Bulk	.....	.....	1,817,088
Cases	710,450	221,500	806,980
Lubricating oil:			
Bulk	.....	.....	1,668,366
Barrels	560,450	36,250	346,100
Cases	336,280	183,070	546,260
Lubricating grease:			
Barrels (lbs.)	995,400	256,500	.....
Paraffin wax:			
Bags (lbs.)	1,476,640	917,840	1,512,940
Petroleum asphalt:			
Bulk	.....	.....	866,208
Barrels (lbs.)	.....	9,020,250	.....

The foregoing figures include shipments of 500 bbls., 1,000 cases, or over.

Tanker Charter Market

Tanker charter rates are firm. New fixtures include the following:

Tanker Topila (Am.), 50,000 bbls. of crude, Tampico to north of Hatteras, 42 cents.

Tanker Lucerna (Br.), clean oil, June loading, Constanza to St. Louis de Rhone, France, 32s. 6d.

Tanker Conrad Mohr, May-June loading, Gulf to United Kingdom-Continent, 50s.

Tanker Sunbeam (Am.), 75,000 bbls. gasoline, April loading, San Francisco to north of Hatteras, 90 cents. (Rates were recently as high as $1.20).

Oil Receipts

Receipts of crude and refined oil at Atlantic ports for the week ended April 6 are estimated at 4,365,000 bbls. a daily average of 624,000 bbls., compared with 3,428,000 bbls., or 490,000 bbls. a day, the preceding week.

Receipts from the Gulf Coast for the past week totaled 2,984,000 bbls., or 426,000 bbls. daily, against 2,011,000 bbls., or 287,000 a day. Receipts from California totaled 225,000 bbls., a daily average of 32,000 bbls., the smallest in some weeks.

Imports for the week totaled 1,156,000 bbls., or 165,000 bbls. daily. Of this daily average, 70,000 bbls. came from Mexico and 96,000 bbls., a record, from South America.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports for the last three weeks; also monthly record for the last 12 months (figures in barrels):

	Week Ended		
	Apr. 6	Mar. 30	Mar. 23
Gulf Coast	426,000	287,000	378,000
Pacific Coast	32,000	71,000	124,000
Mexico	70,000	39,000	6,000
South America	96,000	92,000	68,000
Total	624,000	489,000	576,000

Daily Averages by Months

1927:	Gulf	Pacific	Mexico	So. Am.	Total
Mar.	345,000	103,000	36,000	81,000	565,000
Feb.	379,000	89,000	40,000	48,000	556,000
Jan.	362,000	73,000	49,000	61,000	545,000
1926:					
Dec	363,000	57,000	49,000	61,000	530,000
Nov.	335,000	62,000	56,000	40,000	493,000
Oct.	270,000	71,000	61,000	43,000	445,000
Sept.	295,000	98,000	63,000	58,000	518,000
Aug.	320,000	61,000	71,000	46,000	498,000
July	360,000	66,000	115,000	36,000	577,000
June	396,000	104,000	117,000	18,000	635,000
May	318,000	66,000	114,000	25,000	523,000
Apr.	326,000	92,000	126,000	20,000	564,000

The foregoing figures are based on the carrying capacity of incoming oil-laden tankers.

FARMINGTON, N. MEX.

(Continued from Page 42)

standard rig; Senate Oil Co.'s No. 1 Garland, Section 34-29-11, drilling at 1,753 feet; Southwest Development Co.'s No. 1 Atteberry, Section 24-31-11, down 1,361 feet, water trouble; Ross Bloomfield Royalty Co.'s No. 1 Viles, Section 11-29-11, shut down temporarily at 2,630 feet; Portage Oil & Gas Syndicate's No. 2 Davis, NE SE, Section 24-30-13, heavy flow gas encountered at 1,945 feet; Ringle No. 1, Section 26-27-11, down 325 feet; Continental Oil Co.'s No. 11 Table Mesa, Section 3-27-17, drilling at 1,375 feet; San Juan Petroleum Corp.'s No. 1 Palmer, NE NE, Section 17-29-13, underreaming at 1,073 feet, 250,000 feet gas; San Juan Leaseholds' No. 2 Bowman, NE Section 30-30-15, down 915 feet; R. M. Smith's No. 2 James, NW NW, Section 23-29-11, ready to spud; Aztec Petroleum Co.'s No. 1 McCoy, NE SE, Section 9-30-11, operations suspended at 1,200 feet; Coon-Hennis Syndicate's No. 1 Haren, NW SW, Section 22-30-9, erecting standard rig; A. M. Edwards, trustee's, No. 1 Jackson, NE NE, Section 21-29-11, down 745 feet, showing of oil; W. R. Childers Oil Co.'s No. 1 Ute, Section 24-31-15, capped as gas well at 2,130 feet; Continental Oil Co.'s No. 23 Rattlesnake, Section 12-29-19, drilling at 1,092 feet; Continental Oil Co.'s No. 17 Rattlesnake, Section 2-29-19, sidetracking lost string of tools, down 3,785 feet; Continental Oil Co.'s No. 20 Rattlesnake, Section 3-29-19, completed as well in Dakota at 862 feet; Continental Oil Co.'s No. 8-A Table Mesa, Section 3-27-17, completed in Dakota at 1,420 feet.

GAS EXPORT MEASURE VETOED BY GOVERNOR

OKLAHOMA CITY, Apr. 9.—Governor Johnston has vetoed the Rexroat bill allowing foreign and domestic gas companies to pipe gas outside of the state. He said he saw in the bill a violation of a policy of state which has heretofore demonstrated its own wisdom.

In discussing the claim that the Federal supreme court in the cases brought by Governor Haskell and former Attorney-General West had held the gas could be piped out of the state, Governor Johnston contends that they do not apply to the specific cases covered by this statute, and that Oklahoma has a right to prevent companies from taking gas out of the state. The governor contends that in the old cases the companies had a vested right when Haskell and West brought their cases.

The governor also said that the vetoed bill would permit pipe line companies doing an interstate business to pipe gas out of Oklahoma into Texas and then redistribute it into other states.

Copper Corrosion Test of Gasoline

Experiments Show Free Sulphur More Corrosive in Presence of Combined Sulphur. Explains Removal Method

By H. T. Bennett, R. G. Story and I. A. Clark
Mid-Continent Petroleum Corp., Tulsa, Okla.

The sulphur content has caused more concern to refiners than any other constituent in the composition of gasoline. Although its percentage is usually small compared with hydrogen and carbon, and commonly no larger than the oxygen or nitrogen content, yet these other elements are seldom discussed. To the average refiner the percentage of carbon, hydrogen, nitrogen or oxygen of a given gasoline would mean very little, yet "high sulphur content" immediately creates alarm.

The reason for the difference in general knowledge of the composition of gasoline is due to sulphur specifications, the commonest of which is perhaps the doctor test. The doctor test was intended originally as an indication of malodorous and destructive sulphur compounds. It has since been proved that gasoline of low sulphur content may give a positive doctor test and yet not be corrosive. For this reason the doctor specification is gradually losing favor and may in time be entirely dropped—this has already been done in the case of the U. S. Motor gasoline.

The copper corrosion test is used to detect corrosive agents. This test is very severe and too strict interpretations are often placed on the results. The usual way of interpreting the test is passing if no discoloration of the copper strip and not passing if there is any discoloration or indication of corrosion. Copper is perhaps the most susceptible metal to sulphur corrosion, hence a slight discoloration of a copper strip at 122 degrees Fahrenheit does not mean necessarily that the sample would corrode pumps, valves, lines or the mechanism of an automobile. Petroleum technologists are realizing this fact and inserting in the test that if only an extremely slight discoloration is detected, the sample shall be considered passing.

Sulphur Content of Gasoline

The sulphur content of gasoline depends on its source and the method of refining. Crude oils, high in sulphur, usually yield a gasoline also high in sulphur. This is true of certain oils in Ohio, Indiana and south Texas. Fortunately, Mid-Continent oils are low in sulphur content. A properly treated Mid-Continent gasoline contains between 0.01 and 0.02 per cent sulphur, while gasoline from certain Mexican crudes may contain 0.1 per cent or more. The government specification is 0.1 per cent, hence gasolines high in sulphur must be heavily treated or special methods resorted to, in order to meet the specifications of 0.1 per cent.

Treating gasoline, during the refining operation, if properly done, decreases the sulphur content. Acid, caustic soda and sodium plumbite all tend to remove sulphur compounds. However, it often occurs that through some error in the sweetening operation, excess sulphur is added when the sodium plumbite method is used and a corrosive product is obtained.

The sulphur in gasoline is present either in the free state or the combined form. While free sulphur commonly occurs in crude oils, its presence in finished gasoline is usually a result of improper treatment. The presence of minute quantities of free sulphur can be detected by the copper corrosion test.

Almost all gasolines contain more or less combined sulphur, such as hydrogen sulphide, mercaptans, disulphides, sulphides, thiophanes and thiophenols. Disulphides and sulphides are perhaps the most common sulphur-bearing constituents present in a properly refined oil.

Mercaptans, especially those of high molecular weight and some of those less reactive, may withstand the sweetening treatment and remain as such in the finished product. These are usually noncorrosive and for that reason a sample may show a sour doctor test and not respond to the corrosion test.

Copper Corrosion Test

The regular method of making the copper corrosion test[1] is to place a freshly polished strip of copper in a four-ounce sample bottle and completely cover with the gasoline to be tested, heat to 122 degrees Fahrenheit and maintain for three hours. A more severe test is to hold the temperature at 212 degrees Fahrenheit for the same length of time. For refinery control a 30-minute test at 212 degrees Fahrenheit is used in preference to the three-hour test at 122 degrees Fahrenheit which speeds up the test and avoids delaying plant operations.

The copper strips in the following test were freshly polished and the corrosion test made in the regular way. The most satisfactory method of using copper is to highly polish thin cold-rolled sheets and coat with lacquer. The lacquer is removed with amyl acetate and the strips polished with pumice or tripoli just before using. It has been found important to use uniform copper strips that are smooth and highly polished in order to obtain consistent results. This can be done in an economical way by selecting thin sheet copper and using the strip but once.

There has been little published on the corrosion tests of gasoline. Wood, Sheely and Trusty[2] give the results of the corrosion effect of naphtha solution of various sulphur compounds on several metals. In the preparation of the present paper it was realized that the corrosion test may depend on a number of factors, such as the origin of gasoline, its composition and relative quantities of the different sulphur compounds.

Corrosiveness of Sulphur

A sample of straightrun gasoline was treated with 16-degree Baume sodium hydroxide and washed with water, allowed to set 48 hours over zinc dust and hydrochloric acid, treated with 2½ gallons per barrel with 5 per cent mercuric chloride, refluxed over copper and finally washed with 16-degree Baume sodium hydroxide. The gasoline tested as follows:

Gravity—55.0.
Color—26.
Doctor—negative.
Corrosion—negative.
Maximum boiling point—435.
Absorbed in 66-degree sulphuric acid—3%.
Sulphur—nil.

The presence of mercaptans in the original gasoline was detected by sweetening with doctor, reducing over zinc and hydrochloric acid whereupon the sourness returned. The doctor oxidized the mercaptans to disulphides and the zinc dust and hydrochloric reduced it again to the mercaptan.

A sulphur solution was made by allowing the treated straightrun gasoline to stand over sulphur until saturated. The sulphur content was found to be 0.17 per cent by the A. S. T. M. lamp method. This solution was then diluted to the desired strength with the straightrun gasoline and used for the corrosion tests shown in Table 1.

Table 1

Three-hour copper corrosion test of various concentrations of free sulphur in sulphur free straightrun gasoline.

Per Cent Sulphur	Temp. °F.	Corrosion Test
0.06	80	Medium black
0.05	80	Black spots.
0.04	80	Fine black spots.
0.03	80	Fine black specks.
0.02	80	Slight discoloration
0.01	80	None.
0.00	80	None.
0.06	122	Heavy black.
0.05	122	Medium black.
0.04	122	Black spots.
0.03	122	Fine specks.
0.02	122	Discoloration.
0.01	122	None.
0.00	122	None.
0.06	212	Heavy black.
0.05	212	Heavy black.
0.04	212	Medium black.
0.03	212	Black spots.
0.02	212	Discoloration.
0.01	212	Slight discoloration
0.00	212	None.

[1]Technical Paper 323-A, Bureau of Mines, p.p. 86 and 87.
[2](J. Ind. and Eng. Chem., vol. 17, p. 798, 1925).

The results of Table 1 show that more severe corrosion takes place at high temperatures. At 212 degrees Fahrenheit, 0 01 per cent sulphur showed corrosion, while at 80 and 122 degrees Fahrenheit the same quantity showed no corrosion. If these samples contained combined sulphur, even smaller quantities would show corrosion as will be seen later.

Sulphur in Cracked Gasoline

A sample of cracked gasoline was treated with two gallons per barrel of 30-degree Baume sodium hydroxide, followed with a water wash, allowed to set 24 hours over zinc dust and hydrochloric acid, treated with two gallons per barrel of 5 per cent mercuric chloride, washed with 30-degree Baume sodium hydroxide and finally filtered through 60-90 mesh fuller's earth. The gasoline then tested as follows:

Gravity—53.9 degrees.
Color—30 plus.
Doctor—negative.
Corrosion—negative.
Sulphur—nil.
Maximum boiling point—459.
Absorbed in 66 degrees H_2SO_4—18 per cent.

A saturated sulphur solution was prepared with this gasoline, containing 0.36 per cent sulphur. The increased solubility of sulphur in creacked gasoline over the straight is here noted. Table No. 2 shows the corrosion tests of cracked gasoline containing free sulphur.

Table 2

Three-hour copper corrosion tests of various concentrations of free sulphur in sulphur free cracked gasoline.

Per Cent Sulphur	Temp. °F.	Corrosion Test
0.30	85	Heavy black.
0.25	85	Small black spots.
0.20	85	Faint spots.
0.15	85	None.
0.30	122	Heavy black.
0.25	122	Fine black spots.
0.20	122	Faint spots.
0.15	122	None.
0.30	212	Heavy black.
0.25	212	Large black spots.
0.20	212	Large black spots.
0.15	212	None.

The results of Table 2 show again more severe corrosion takes place at higher temperatures. It is noteworthy the large amount of sulphur necessary to cause corrosion in cracked gasoline when no combined sulphur is present.

Corrosiveness of Free Sulphur

In testing ordinary gasoline, peculiar colors are often encountered in making the copper corrosion tests. Peacock colors, shades of red, green, blue and brown have been noted, often producing fluorescent effects. None of these peculiar shades have been noted from corrosions of free sulphur dissolved in sulphur free gasolines. These colors have, however, been obtained when combined sulphur is present as will be shown in Table 3.

Mercaptan solutions were made by dissolving normal butyl mercaptan in both the specially prepared straightrun and the cracked gasoline. Analysis by burning tests showed 0.27 per cent mercaptan in each sample. Blends were made of the solutions used in the previous tests and sweetened with doctor. Table 3 shows the corrosion tests obtained.

The results of Table 3 show that free sulphur is much more corrosive in the presence of combined sulphur. The peculiar peacock colors often encountered are manifested in these tests. It was found necessary in order to prevent corrosion, to use sufficient mercaptan to react with all the free sulphur during sweetening. It will also be noted that the larger the quantity of combined sulphur, the more corrosive the free sulphur becomes.

In the sweetening operations the mercaptan is changed into the disulphide. $2C_4H_9SH + Na_2PbO_2 \rightarrow C_4H_9S - SC_4H_9 + PbS + 2NaOH$. It is therefore possible that the disulphide activates the free sulphur forming organic polysulphides or persulphides R_2S_3, R_2S_4, etc.

The results in Table 3 show that it is possible to overcome a bad corrosion in gasoline by blending the required quantity of mercaptan to react with the free sulphur in the corrosive gasoline. This has the effect of making the product sour again and by repeating the sweetening operation the free sulphur is removed and a negative corrosion is the result. This operation appears to be of value to refiners to meet situations where a gasoline has been overtreated with sulphur.

Table 4 shows results using cracked instead of straightrun gasoline as solvent for the sulphur and mercaptan.

The results in Table 4 show that much less free sulphur is required to produce corrosion in cracked gasoline when combined sulphur is present. It will also be noted that the larger the quantity of combined sulphur present, the more corrosive the free sulphur becomes.

Ethyl sulphide showed no corrosion in cracked gasoline either alone or in the presence of a small amount of free sulphur.

Summary

A study has been made of the corrosion of free sulphur in cracked and straightrun gasolines with and without the presence of combined sulphur. Free sulphur is much more corrosive in the presence of combined sulphur. A method of removing free sulphur in corrosive gasoline by use of mercaptan is given.

Table 3

Three-hour copper corrosion tests on blends of straightrun gasoline containing free sulphur and normal butyl mercaptan after sweetening with doctor.

Blends		Theoretical Per Cent Free Sulphur Remaining	
Free Sulphur Per Cent	Mercaptan Per Cent	After Sweetening	Corrosion Test at 212°F.
0.02	0.056	0.010	Heavy peacock coloration.
0.02	0.074	0.005	Light brown discoloration.
0.03	0.140	0.005	Dark brown discoloration.
0.02	0.112	0.000	None.
0.01	0.112	Excess mercaptan.	Faint brown.

Table 4

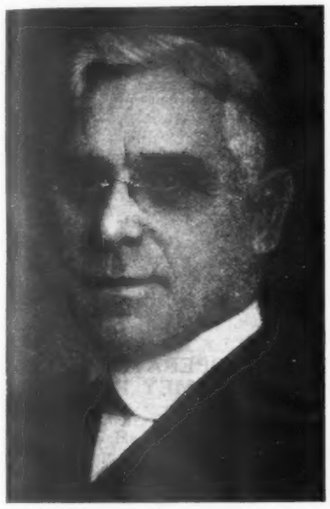
Three-hour copper corrosion tests on blends of cracked gasoline, containing free sulphur and normal butyl mercaptan, after sweetening with doctor.

Blend		Theoretical Per Cent Free Sulphur Remaining	
Per Cent Free Sulphur	Per Cent Mercaptan	After Sweetening	Corrosion Test at 212°F.
0.16	0.14	0.135	Heavy black.
0.05	0.14	0.025	Light brown.
0.15	0.15	0.123	Heavy black.
0.15	0.10	0.132	Faint black.
0.15	0.05	0.141	No corrosion.
0.05	0.22	0.010	Light brown.
0.04	0.20	0.005	Light brown.
0.03	0.13	0.005	Light brown.
0.03	0.08	0.005	No corrosion.
	0.15% ethyl sulphide		No corrosion.
0.15	0.15% ethyl sulphide		No corrosion.

PROMINENT OIL MAN, JOHN S. GRIFFIN, DIES

John S. Griffin, one of the largest independent oil producers in the industry and a resident of Tulsa, died of Bright's disease in a St. Louis, Mo., hospital on Monday, April 11.

Mr. Griffin was born in Brady's Bend, Armstrong County, Pennsylvania, in 1867. In his youth he went to work in the oldest Pennsylvania oil fields. In 1887, gaining enough experience to



John S. Griffin

branch out into broader activities, he went to Lima, Ohio. In course of time he became a drilling contractor and located in West Virginia. He acquired fee title to 4,000 acres of land in the Cairo district, and this was the foundation for the fortune which Mr. Griffin later acquired from oil. The big tract was productive and was developed by the Griffin Producing Co., which was made up of John S. and his brother, J. D. Griffin, of Cairo, W. Va. It is still producing oil. Mr. Griffin moved to Columbus, Ohio, to be near properties he had acquired in Hocking County, Ohio, and while there acquired holdings in Kansas and Oklahoma. His Mid-Continent properties made it seem best for him to move to a city close to them, and he became a resident of Tulsa in 1918.

Mr. Griffin was one of the original stockholders in the Pure Oil Co. and in the Skelly Oil Co. He served for a time as a member of the board of directors of the Skelly Oil Co. He was also a stockholder in the National Refining Co. and in the Union Oil Co. of California and the Pennok Oil Co. The latter company was one of the large producers from the deep sand in Tonkawa.

In the midst of his widespread oil activities, Mr. Griffin found time for recreation, and the apple of his eye was his 45,000-acre ranch in southeastern New Mexico.

The deceased is survived by his widow; one son, John S. Griffin, Jr., of Tulsa; two daughters, Miss Dorothy Griffin of Tulsa and Mrs. Julio De Serzano y Jorrin of Havana, Cuba; and the following brothers and sisters: Thomas P. and Timothy C. of Tulsa; James B. of Parkersburg, W. Va.; Joseph D. of Cairo, W. Va.; Mrs. M. W. Foster of Kittanning, Pa.; Mrs. Joseph P. O'Neal of Fennellton, Pa., and Miss Julia Griffin of Columbia, Ohio.

Mr. Griffin's mother, Mrs. Julia Griffin, of Parkersburg, died recently at the age of 87 years.

The funeral will be held in Butler, Pa. The body of Mr. Griffin was taken directly from St. Louis to Butler to the home of Mrs. William Kelly, 605 Brady Street.

NAME PERSONNEL AND LOCALE FOR RESEARCHES IN PETROLEUM

John D. Rockefeller on November 15, 1925, initiated a program of scientific research in the geology, physics and chemistry of petroleum under the auspices of the American Petroleum Institute, and made available therefor the sum of $250,000, payable in annual installments of $50,000 in each of five years commencing with the year 1926.

On January 12, 1926, the Universal Oil Products Co. of Chicago, Ill., made available to the institute, in furtherance of the same program, an additional sum of $250,000, payable in five annual installments of $50,000 each, beginning with the year 1926.

For the purpose of outlining and assisting in the prosecution of the work contemplated, the American Petroleum Institute sought, and obtained the advice and co-operation of the National Research Council of Washington, D. C., which is an organization to foster, encourage and co-ordinate co-operative research. To assist in the co-operation requested the National Research Council appointed a central petroleum committee which recommended 31 projects in fundamental research in the geology, physics and chemistry of petroleum. These projects, with the exception of Nos. 2 and 29, have been assigned.

The projects, together with the locale, and the personnel conducting the research, have just been announced as follows:

Geology—Project 1: Generation of Oil in Rocks by Shearing Pressures; locale, Department of Geology, University of California, Berkeley, Calif.; personnel, Prof. Warren J. Mead, director; J. E. Hawley, junior research fellow.

Geology—Project 3: Studies of Source Rocks in the Micro-Furnace (microthermal examination of mother rocks of petroleum); locale, laboratory of United States Geological Survey, Washington, D. C.; personnel, Dr. David White, director, senior geologist, United States Geological Survey; Miss Taisia Stadnichenko, research associate.

Geology—Project 4: Origin and Environment of Source Sediments; locale, headquarters, Washington, D. C.; personnel, in charge of advisory committee, W. A. J. M. van der Gracht, geologist; Austin H. Clark, zoologist and oceanographer; T. Wayland Vaugh, paleontological sedimentarian and oceanographer; Dr. Parker D. Trask, research associate.

Geology—Project 5: Diatoms as Source of Oil; locale, headquarters, Stanford University, Palo Alto, Calif.; personnel, Prof. C. F. Tolman, director; T. Hashimoto, junior research fellow; Lewis A. Thayer, junior research fellow.

Physics—Project 6: The Separation, Identification and Determination of the Chemical Constituents of Commercial Petroleum Fractions; locale, United States Bureau of Standards, Washington, D. C.; personnel, Dr. Edward W. Washburn, director, chief chemist, bureau of standards; John H. Bruun, research fellow.

Physics—Project 7: Caltalytic Methods Applied to Petroleum Hydrocarbons; locale, laboratory of Physical Chemistry, Princeton University, Princeton, N. J.; personnel, Prof. Hugh S. Taylor, director; Prof. R. N. Pease, research associate; P. R. Chesbro, research assistant; F. S. Drugan, research assistant.

Chemistry—Project 8: The Effect of Electric Discharge Upon Gaseous Hydrocarbons; locale, chemical laboratory, University of Minnesota, Minneapolis, Minn.; personnel, Dr. Samuel C. Lind, director; Dr. George Glockler, research fellow; Theodore T. Budrow, research assistant.

Physics—Project 9: Analysis of Hydrocarbons by the Time Positive—Ray Method; locale, Norman Bridge Laboratory of Physics, California Institute of Technology, Pasadena, Calif.; personnel, Dr. Robert A. Millikan, director; D. Dwight Taylor, research assistant.

Physics—Project 10: Analysis by Fractional Distillation From Absorbent Materials (Charcoal, Silica, Gel, etc.), Both of Light and Heavy Members of the Hydrocarbon Series; locale, Norman Bridge Laboratory of Physics, California Institute of Technology, Pasadena, Calif.; personnel, Dr. Robert A. Millikan, director.

Physics—Project 11: Analysis of the Gradual Oxidation Prior to Ignition of Fuels in Internal Combustion Engines, and the Relation of Such Oxidation to Detonation; locale, Norman Bridge Laboratory of Physics, California Institute of Technology, Pasadena, Calif.; personnel, Dr. Robert A. Millikan, director; W. M. Zaikowsky, research associate; V. Sokoloff, research assistant; H. B. Holroyd, research assistant.

Physics—Project 12: Accurate Comparison by Viscosity Methods Developed by Millikan of the Viscosities and Hence of the Mean Free Paths of Ring and Chain Hydrocarbons of the Same Molecular Weight and Composition; locale, Norman Bridge Laboratory of Physics, California Institute of Technology, Pasadena, Calif.; personnel, Dr. Robert A. Millikan, director; Ralph K. Day, research assistant.

Physics—Project 13: Determination of Physical Properties of Petroleums and Petroleum Products; locale, Department of Chemical Engineering, University of Michigan, Ann Arbor, Mich.; personnel, Prof. E. H. Leslie, director; Dr. H. M. Randall and Dr. F. E. Bartell, advisory committee; George H. Fancher, research assistant, in co-operation with various part-time investigators.

Chemistry—Project 14: Preparation of Pure Typical Hydrocarbons and a Study of Their Behavior When Heated Alone and With Catalysts; locale, Gates Chemical Laboratory, California Institute of Technology, Pasadena, Calif.; personnel, Prof. Howard J. Lucas and Prof. Arthur A. Noyes, directors; Robert T. Dillon, research assistant; one research assistant not yet selected.

Chemistry—Project 15: A Study of the Cyclopentane Fraction of Southern California Petroleum; locale, Department of Chemistry, Johns Hopkins University, Baltimore, Md.; personnel, Dr. E. Emmet Reid, director; Dr. F. H. Case, research fellow.

Chemistry—Project 16: Isolation and Investigation of Thermolabile Hydrocarbons Present in Petroleum; locale, Laboratory of Organic Chemistry, Harvard University, Cambridge, Mass.; personnel, Dr. James B. Conant, director; Dr. Albert H. Blatt, research fellow.

Chemistry—Project 17: Isolation and Study of Sulphur Compounds Present in Petroleum; locale, Laboratory of Organic Chemistry, Northwestern University, Evanston, Ill.; personnel, Dr. Frank C. Whitmore, director; Miss G. E. Woodward, junior research fellow.

Chemistry—Project 18: Non-Catalytic Thermal Decomposition of Pure Hydrocarbons and Related Compounds; locale, Laboratory of Organic Chemistry, Northwestern University, Evanston, Ill.; personnel, Dr. Charles H. Hurd, director; L. U. Spence, junior research fellow.

Chemistry—Project 19: A Study of the Relative Rates of Reaction of the Olefines; locale, Laboratory of Organic Chemistry, Massachusetts Institute of Technology, Cambridge, Mass.; personnel, Dr. Harold S. Davis, research associate.

Chemistry—Project 20: Isolation and Investigation of Nitrogen Compounds Present in Petroleum; locale, Department of Chemistry, University of Texas, Austin, Tex.; personnel, Prof. J. R. Bailey, director; E. J. Poth, research fellow; W. D. Armstrong, research assistant; C. C. Cogburn, research assistant.

Chemistry—Project 21: Determination of Physical and Chemical Properties of All Types of Sulphur Compounds Present in Petroleum; locale, Department of Chemistry, Mississippi College, Clinton, Miss.; personnel, Prof. A. E. Wood, director; assistance of six undergraduates.

Geology—Project 22: Thicknesses and Characters of the Strata in the Deeper Sedimentary Basins of North America; locale, all major synclines of North America to be considered, but actual field work will be limited to selected parts of the United States headquarters, Washington, D. C.; personnel, under direction of the following advisory committee: R. S. Bassler, United States National Museum; W. E. Wrather, Dallas, Tex.; H. D. Miser, United States Geological Survey; C. H. Wegemann, New York; Elliott Blackwelder, Stanford University, and Dr. Raymond C. Moore, United States Geological Survey, research associate.

Geology—Project 23: Limestones and Dolomites as Reservoir Rocks; locale, Department of Geology, University of Illinois, Urbana, Ill.; personnel, Dean A. H. Daniels, director; Prof. W. V. Howard, research fellow.

Geology—Project 24: Structural Relations of Beds That Are Separated by Converging Strata; locale, Department of Geology, University of Oklahoma, Normal, Okla.; personnel, Prof. V. E. Monnett, director; H. Andrew Ireland, research assistant.

Physics—Project 25: Determination of Geothermal Gradients in Oil Fields on Anticlinal Structure; locale, Department of Petroleum Engineering, University of Oklahoma, Norman, Okla.; Bureau of Economic Geology, University of Texas, Austin, Tex.; Department of Mining and Metallurgy, University of California, Berkeley, Calif.; personnel, Prof. H. C. George, University of Oklahoma; Prof. E. H. Sellards, University of Texas; Prof. Lester C. Uren, University of California, directors; A. L. Cocke, University of Oklahoma, research assistant; E. M. Hawtof, University of Texas, research assistant; A. J. Carlson, University of California, research assistant.

Physics—Project 26: Determination of the Thermal Conductivity of Gases and Its Application to the Precise Analysis of Hydrocarbons and Other Gases; locale, Geophysical Laboratory, United States Geological Survey, Washington, D. C.; personnel, Dr. L. H. Adams, director; Dr. F. C. Weaver, research associate.

Physics—Project 27: The Displacement of Petroleum Oils From Oil Bearing Sands by Use of Selected Aqueous Solutions; locale, Chemical Laboratory, University of Michigan, Ann Arbor, Mich.; personnel, Dr. Floyd E. Bartell, director; F. Laverne Miller, research assistant; research assistant not yet appointed.

Chemistry—Project 28: A Study of the Reactions of a Number of Selected Organic Sulphur Compounds; locale, Department of Chemistry, Johns Hopkins University, Baltimore, Md.; personnel, Dr. E. Emmet Reid, director; Dr. Parry Borgstrom, research fellow.

Chemistry—Project 30: A Study of the Metallic Constituents of Crude Petroleum; locale, School of Chemistry and Physics, Pennsylvania State College, State College, Pa.; personnel, Dr. Gerald Wendt, director; William Brown Shirey, junior research fellow.

Chemistry—Project 31: The Action of Sulphuric Acid on Paraffin Hydrocarbons; locale, School of Petroleum Engineering, University of Oklahoma, Norman, Okla., personnel, Prof. F. W. Padgett, director; Dr. Bruce Houston, research fellow.

PENNSYLVANIA MARKET HOLDING UP VERY WELL

OIL CITY, Pa., Apr. 9.—The gasoline situation in the Pennsylvania refined market is holding up very good at this time, despite the recent tank wagon reduction, the price structure remaining the same. The demand was a little better than the previous week. The same holds true with naphtha.

The demand or kerosene improved slightly. Wax was still soft holding the same position as the previous week. Neutrals remained strong and scarce with no surplus. The fuel oil demand was somewhat weaker in this district during the week. There was a little more buying in cylinder stocks and the market improved considerably.

REFINING AND MARKETING

SAN ANGELO REFINING HAS BEEN REORGANIZED

W. B. Hassett and R. P. Humes of Tulsa have been elected president and vice president respectively of the reorganized San Angelo Refining Co. The company is now enlarging its refinery at San Angelo, Tex., so that it will be operating on a basis of 1,500 bbls. daily by May 1.

Both Messrs. Hassett and Humes are well known in Mid-Continent refining

R. P. Humes

circles. Mr. Hassett is president of the Imperial Refining Co. and the Kettle Creek Refining Co. and Mr. Humes was formerly manager of the Tulsa office of the Transcontinental Oil Co.

Directors of the San Angelo company in addition to Messrs. Hassett and Humes are: Levi Smith of Texon, president of the Big Lake Oil Co.; R. D. Lavery and C. R. Armstrong. Mr. Lavery built the refinery last year and will continue with the company as secretary and treasurer.

The plant will operate on crude from the West Texas fields. A large part of the output will be sold locally.

PIPE LINE DECISION INVOLVES LARGE SUMS

The refusal of the United States Supreme Court last week to review a decision of the Eighth District Circuit of Appeals in which the Derby Oil Co. of Wichita, Kans., was held accountable for the payment of a tax on oil transported in pipe line under the oil transportation act, will cost certain refining organizations several million dollars. The decision of the Supreme Court brings an end to litigation which has been in the courts for several years.

The litigation was the result of oil transportation tax act which became effective during the war and which was repealed in April. This act placed a tax on oil transported by pipe line. The Derby and several other companies claimed exemption from the tax on the ground that they only transported oil by pipe line for use at their own refineries and were not common carriers. As a result, several of the companies either refused to pay the tax or paid it under protest.

The Derby company filed what was considered a test case. A favorable decision was obtained in the Federal District Court at Kansas City about two years ago but this was later reversed in the Circuit Court of Appeals.

MONTANA GASOLINE OUTPUT GAINS BUT NOT EQUAL TO CONSUMPTION

Fourteen operating refineries in Montana last year increased their gasoline production over the previous year but they still are not refining sufficient motor fuel to meet the consumption demands within the State. This situation was revealed in the 1926 report of the Montana State Board of Equalization which has just been completed.

A total of 48,604,801 gallons of gasoline was consumed in the State in 1926. Of this amount, 33,162,804 gallons were manufactured at refineries located in the State and 15,441,997 gallons were imported, the latter coming primarily from Wyoming refineries. In addition to furnishing 33,162,804 gallons for intrastate consumption the Montana refiners sold 4,049,877 gallons outside the State. Subtracting this exported gasoline from the imported and the 11,392,120 gallons remaining represents the excess consumption over production in the State.

As shown in the following table, the Lewistown Oil & Refining Co., at Lewistown, Mont., is the largest refiner of gasoline in the State with the Arro Oil & Refining Co. at Lewistown second and the Sunburst Refining Co. at Great Falls, third. The first two plants are located in the Cat Creek producing area, while the Sunburst plant operates exclusively with crude from the Kevin-Sunburst Fields.

The Continental Oil Co. is the largest importer of gasoline in the State. The company has the largest distribution in the State and in addition to the gasoline imported from its Wyoming refineries, it distributes the output of the Lewistown Oil & Refining Co. The Texas Company and the White Eagle Oil & Refining Co. are also large importers of gasoline in the State.

The following tables summarize the Montana situation in regard to gasoline for 1926:

Gasoline Imported Into Montana, 1926

	Quarter	Imports
Arro O. & R. Co., Lewistown, Mont.	1	.....
	2	327,849
	3	286,361
	4	81,705
	Total	695,915
Bluebird Oil & Refining Co., Butte, Mont.	1	16,469
	2	16,144
	3	32,157
	4	.....
	Total	64,770
Continental Oil Co., Denver, Colo.	1	745,869
	2	1,999,226
	3	3,582,094
	4	2,051,827
	Total	8,379,036
The Texas Company, Spokane, Wash.	1	696,758
	2	1,226,700
	3	1,609,479
	4	1,123,542
	Total	4,656,479
White Eagle Oil & Refining Co., St. Paul, Minn.	1	204,131
	2	204,192
	3	347,706
	4	253,929
	Total	1,009,958
Miscellaneous imports	1	88,864
	2	133,065
	3	208,757
	4	205,153
	Total	635,839
Total imports		15,441,997

Gasoline Produced by Montana Refineries, 1926

	Quarter	Total Mfg. (Gallons)	Exported (Gallons)	Sold in State (Gallons)
Absher Refineries, Inc., Kevin, Mont.	1	6,885	.....	6,885
	2	48,250	.....	48,250
	3	52,000	.....	52,000
	4	38,640	.....	38,640
	Total	145,775	.....	145,775
Arro Oil & Refining Co., Lewistown, Mont.	1	1,882,726	792,151	1,090,575
	2	1,989,766	642,435	1,347,331
	3	2,368,437	630,701	1,737,736
	4	1,610,388	245,557	1,364,831
	Total	7,851,317	2,310,844	5,540,473
Big West Oil Co., Kevin, Mont.	1	194,663	.....	194,663
	2	186,220	.....	186,220
	3	155,868	.....	155,868
	4	47,862	2,679	45,183
	Total	584,613	2,679	581,934
Bluebird Oil & Refining Co., Butte, Mont.	1	40,859	.....	40,859
	2	201,579	.....	201,579
	3	131,809	.....	131,809
	4	192,485	.....	192,485
	Total	566,732	.....	566,732
Hart Refineries, Inc., Missoula, Mont.	1	133,544	.....	133,544
	2	220,374	.....	220,374
	3	261,406	.....	261,406
	4	227,244	.....	227,244
	Total	842,568	.....	842,568
International Refining Co., Sunburst, Mont.	1	.....	.....	.....
	2	.....	.....	.....
	3	882,056	48,969	833,087
	4	512,796	.....	512,796
	Total	1,394,852	48,969	1,345,883
Lewistown Oil & Refining Co., Lewistown, Mont.	1	3,073,178	40,722	3,032,456
	2	3,830,893	7,963	3,822,930
	3	4,125,001	.....	4,125,001
	4	3,003,902	8,187	2,995,715
	Total	14,032,974	56,872	13,976,102
North American Oil Ref. Trust, Kalispell, Mont.	1	13,646	.....	13,646
	2	161,290	.....	161,290
	3	250,000	.....	250,000
	4	153,568	8,212	145,356
	Total	578,504	8,212	570,292
Reliance Refining Co., Kalispell, Mont.	1	154,060	.....	154,060
	2	267,373	.....	267,373
	3	194,840	.....	194,840
	4	194,873	.....	194,873
	Total	811,146	.....	811,146
Shelby Pipe Line & Ref. Co., Shelby, Mont.	1	.....	.....	.....
	2	.....	.....	.....
	3	176,630	.....	176,630
	4	295,565	.....	295,565
	Total	472,195	.....	472,195
Silver Bow Refining Co., Butte, Mont.	1	197,347	.....	197,347
	2	199,652	.....	199,652
	3	300,173	.....	300,173
	4	148,058	.....	148,058
	Total	845,230	.....	845,230
Snow Cap Oil Co., Sunburst, Mont.	1	14,350	.....	14,350
	2	55,990	.....	55,990
	3	68,315	.....	68,315
	4	41,821	.....	41,821
	Total	180,476	.....	180,476
Sunburst Refining Co., Great Falls, Mont.	1	862,102	8,178	853,924
	2	1,944,995	323,866	1,621,129
	3	2,295,883	729,905	1,565,978
	4	1,378,237	283,926	1,094,311
	Total	6,481,217	1,345,875	5,135,342
Yale Oil Corp., Miles City, Mont.	1	440,943	105,507	335,436
	2	633,694	68,897	564,797
	3	817,520	79,843	737,677
	4	532,925	22,179	510,746
	Total	2,425,082	276,426	2,148,656
Total all refineries		37,212,681	4,049,877	33,162,804

HUMBLE OPERATING M'CAMEY REFINERY

The Humble Oil & Refining Co. is now operating its new skimming plant located at McCamey in Upton County, Texas. The plant has a rated capacity of 10,000 bbls. daily and at present is handling approximately that amount of crude. The crude is coming from the Crane-Upton Field, one of the principal producing areas of the West Texas area.

The plant has four tube stills equipped with bubble towers. The fuel oils bottoms constitute about 70 per cent of the crude charge. The overhead products include a 400 endpoint gasoline and a water white distillate which is used as fuel for internal combustion engines.

The company is constructing a treating plant which will be used in making finished gasoline at the plant. This gasoline will be sold in the McCamey territory. The surplus gasoline will be moved to Baytown, Tex. for export. The fuel oil has been sold on contracts to the Southern Pacific, Orient and Sante Fe Railroads. The plant is located on the Orient Railroad.

An additional tube still is to be installed which will increase the capacity to 12,000 bbls. daily. The plant was erected under the supervision of J. M. Finley, general superintendent of the Humble's refineries. R. X. Cook has been made superintendent of the plant.

MARLAND PURCHASES ARKANSAS STATIONS

The Marland Refining Co. extended its marketing facilities into the State of Arkansas last week through the purchase of the bulk and service station properties of the Gibson Oil Co. The purchase involves 87 bulk and service stations. A few of these stations are located in eastern Oklahoma.

The Gibson Oil Co. was one of the pioneer jobbing organizations in Arkansas and at the time of the sale had the largest gasoline gallonage of any independent jobbing concern in the State. The company had a contract with the Independent Oil & Gas Co. of Tulsa, Okla., covering the bulk of its gasoline requirements. This contract does not expire until October. It is understood that H. A. Gibson, president of the company, will continue in the jobbing business.

A. F. HICKEY'S NEW POST

CHICAGO, Apr. 11.—A. F. Hickey, former assistant general sales manager of the Cosden Sales Corp., has been placed in charge of the light oil department of the Industrial Petroleum Co. The latter company is a large marketer of fuel oils and has just added the light oil department.

Oil Securities Active and Irregular

Strong Support Developed in Several Stocks When Selling Became Severe. Activity Limited in Some

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, Room 629, No. 101 Park Avenue, New York, N. Y.

NEW YORK, Apr. 11.—Oil securities were active and irregular during the last week. Strong support seemed to be forthcoming in several stocks when selling became severe. In several issues activity was limited, including Standard of New Jersey, California and in Standard Oil issues traded in on the curb.

Pan American Petroleum

Considerable activity has developed in the Class B stock of the Pan American Petroleum & Transport Co. On the basis of the present dividend rate of $6 per share annually, the stock yields about 10 per cent at current market prices. In some quarters it had been feared that the $6 rate would not be continued due to unfavorable conditions in Mexico. However, with reports of favorable earnings in 1926 and with the inauguration of dividends on Lago Oil & Transport Co. stock, some take the view that Pan American will continue the $6 rate so long as these conditions continue.

The floating supply of Lago Oil & Transport stock, which rose in the market from about $22 to $31 per share, is small, in as much as Pan American is understood to have in its treasury at least 90 per cent of it. Furthermore, the floating supply of Pan American Petroleum & Transport stock is understood to be comparatively limited due to Standard Oil of Indiana's interest therein.

Development of Lago Oil & Transport into a leading oil producing unit under leadership of Pan American and Standard of Indiana has been sensational. Pan American, itself, has maintained a strong position in Mexico despite the unsettlement there.

One of the features of the recent growth of the Pan American company, however, is its development into a prominent domestic refining and marketing company. The object of this is to give the company the proper balance as between its selling and producing organization; in other words, to make it a complete, well-rounded unit. This object is now believed to have been attained.

Pan American has always been a leader in the fuel oil market and its position in this branch of the business is secure because it is one of the largest producers of heavy grade crude oil in the world. The fuel oil market is understood to be in an exceptionally strong position at the present time, as overproduction is not so pronounced as with respect to high grade oil. Fuel oil prices are relatively strong.

All this would seem to argue in favor of maintenance of the $6 dividend rate, provided no change for the worse in general conditions is anticipated by the management in the near future.

Atlantic Refining

A fight for proxies for the annual meeting of the Atlantic Refining Co., which is to be held May 3, has developed. H. W. Nethken, vice president of the Pittsburgh & West Virginia Railway, who holds 6,500 shares of common stock of the Atlantic Refining Co., has sent a general letter to stockholders requesting their proxies and pointing out that under Pennsylvania laws cumulative voting is permitted and that proxies for 50,000 shares would elect one director.

He takes sharp issue with the manner in which the company's earnings statement is presented and says that stockholders should be getting dividends. According to his calculation, the company earned $16,500,000 for the 500,000 common shares last year, or $33 a share. However, he does not take the $9,767,842 reserves for depreciation and depletion and tax and inventory reserves into consideration. This deduction brings net for the common, according to the official report, down to $5,620,984, or the equivalent of $11.25 a share.

Warner-Quinlan Co.

Hayden, Stone & Co. are offering for subscription $2,500,000 Warner-Quinlan Co. 15-year 6 per cent convertible gold debentures at 99 and interest, to yield over 6.10 per cent. The Warner-Quinlan Co. was incorporated in 1903 in Maine. The company and its subsidiaries constitute a complete unit in the petroleum industry, including the production, transportation, refining and distributing of petroleum and petroleum products. The asphaltic products are marketed under the trade-mark "Montezuma Brand." Gasoline and oils are marketed under the trade-mark "Mileage." The company, through two subsidiaries, owns and operates oil properties in Mexico. The company's refinery at Warners, N. J., is modern in every respect. Its location on New York harbor permits of shipments by either rail or water. The plant has a daily crude oil capacity of 6,000 bbls. The company owns, through subsidiaries, bulk filling stations at Long Island City, N. Y., Inwood, L. I., and Secaucus, N. J., for distribution of gasoline, and controls through ownership, part ownership, or lease, 86 gasoline service stations in and around New York City. The properties of two subsidiaries in Mexico are producing about 4,200 bbls. of oil daily. The company owns 143 steel tank cars of about 10,000 gallons' capacity each.

California Eastern

The merger and transfer of the Julian Petroleum Corp. assets into the California Eastern Oil Co. will be consummated upon a basis of approximately three and four-tenths of a share of a share of California Eastern for each share of Julian Petroleum preferred, and one-half share of California Eastern for each share of Julian common. The proposition will be submitted to stockholders for approval at a meeting April 14 at 8 p. m. The plan to create a voting trust to insure in particular continuity of the management also will be submitted. The trustees therein to be voted upon include H. J. Bauer, L. J. King, John E. Barber, S. C. Lewis and C. W. Durbrow.

National Supply

The report of the National Supply Co. of Delaware and subsidiaries for the year ended December 31, 1926, shows net income of $4,534,161, after interest, Federal taxes, depreciation, etc., equivalent after preferred dividends to $15.18 a share (par $50) earned on 265,900 shares of common stock. This compares with $2,014,756, or $5.70 a share, in 1925.

The consolidated income account for 1926 compares with 1925 as follows:

	1926	1925
Gross income	$10,678,363	$ 7,353,039
Expenses	4,831,742	4,345,823
Balance	$ 5,846,621	$ 3,007,216
Other income	886,370	533,413
Total income	$ 6,732,991	$ 3,560,629
Interest, ord. taxes, depr.	1,173,996	1,182,224
Federal taxes	815,353	363,649
Pension fund reserve	209 481	.....
Net income	$ 4,534,161	$ 2,014,756
Preferred dividends	496,132	496,651
Common dividends	1,503,468	792,714
Surplus	$ 2,534,561	$ 725,391

The consolidated balance sheet of the National Supply Co. of Delaware and subsidiaries, as of December 31, 1926, compares as follows:

Assets	1926	1925
Land, bldgs., machinery, etc.	$*7,005,664	$ 7,414,118
Cash and call loans	3,252,483	5,346,973
Notes and accounts receivable	14,285,915	10,820,562
Short term invest.	1,049,568	.....
Inventories	14,609,568	12,642,503
Investments	323,128	252,832
Deferred charges	29,306	57,344
Total	$40,555,432	$36,534,332
Liabilities		
Preferred stock	$ 7,095,100	$ 7,095,100
Common stock	†13,295,000	13,295,000
Cap. stk, surpl. of subs.	.....	30,780
Bonds of subsid.	.....	101,500
Accounts payable	3,988,075	2,360,577
Accrued wages, etc.	150,949	116,553
Federal taxes, etc.	815,353	363,650
Insur, pension res.	896,680	1,014,908
Surplus	14,314,275	12,156,264
Total	$40,555,432	$36,534,332

*After depreciation.
†Represented by 265,900 shares, par $50.

Chairman James H. Barr states in the annual report that drilling activities in 1926 were considerably greater than in 1925, resulting in enlarged gross income. Larger business was handled with but a moderate increase in selling and general expense, so that practically all gain in gross profit was retained for net income.

"After setting up adequate reserves, including depreciation, inventories, doubtful accounts, taxes and pensions, and paying an extra dividend of $2 in cash to common stockholders, the surplus was increased by over $2,000,000," he says.

"This increased business was handled by your company last year without substantial addition to fixed assets. In fact, its fixed account, after depreciation, was lower at the end of the year than at the beginning."

Outstanding bonds of the Union Tool Co. and preferred stock of the Dayton Pipe Coupler Co. were retired so that the parent National Supply Co. now has all the outstanding securities of these subsidiaries. Patent suits in which Union Tool Co. was involved were settled out of court and, as a result, National Supply's only liabilities, either actual or contingent, are current bills.

Oil Well Supply

The report of the Oil Well Supply Co. and subsidiaries for the year ended De-

(Continued on Page 148)

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	Clos. Quot. Apr.11	Clos. Quot. Apr.4	1927 High	1927 Low	1926 High	1926 Low	1925 High	1925 Low
Amerada Corp.	..	30⅛	29	37⅝	30⅝	32⅞	24⅜	..	..
Atlantic Ref., com.	100	109½	109	117⅝	107	128⅜	97	117½	95½
Barnsdall "A"	25	28½	28⅝	35½	27	32½	23½	33½	18⅜
California Pet., com.	25	26⅛	26	32⅜	26⅜	38⅛	30⅞	34⅜	23⅜
Houston Oil	100	105	102	124⅝	60½	75	50¼	85	59
Independent Oil & Gas	..	22½	21⅝	32⅜	23½	34	20¼	41⅜	13½
Louisiana Oil	10	13½	12⅝	18⅛	13½	19⅝	12	23⅜	13⅜
Maracaibo	..	*16	16⅛	22⅝	16¼	27⅜	18⅜	35½	20⅜
Marland	..	46⅜	45⅜	58½	49⅝	63⅝	49¼	60⅛	32⅝
Mid-Continent Pet.	..	32⅝	32	39⅜	33⅞	41	25⅝	38	25⅜
National Supply	50	90½	*89	95⅜	82½	84⅞	55½	71	54⅜
Oil Well Supply	25	34	*34	40⅜	31½	36	30	38	33⅜
Pan. Amer., B	50	58⅝	57⅜	65⅞	57½	72⅜	56⅛	83⅞	59½
Pan. Amer., Western B	..	21½	21½	37⅜	26⅞	46	34	94⅜	37¼
Phillips Pet.	..	46⅝	45⅞	60¼	49⅛	54⅞	42⅛	47⅛	36¼
Producers & Refiners	50	23½	*24	32	16⅜	26	11	32⅝	12½
Pure Oil, com.	..	28¼	27⅜	32⅝	27¼	31	25⅜	33⅜	25½
Royal Dutch, N. Y., sh.	13.40	49¼	48⅞	54½	50	57⅜	49⅜	57⅜	48¼
Shell Transport	10	44¼	*43	49	44½	48⅜	42	49	39⅜
Shell Union, com.	..	27⅞	27⅜	31⅜	28	30⅞	24	28⅜	21⅝
Simms Pet.	10	18⅛	18	22⅜	18⅞	28⅝	16½	28½	17⅜
Sinclair Consolidated	..	17⅜	17⅛	22⅜	17⅝	24⅞	16⅜	24⅜	17
Skelly Oil	25	29⅝	28⅜	37⅜	30½	37⅛	27	32½	21⅜
Standard of California	25	55⅝	54⅝	60⅜	55½	63½	54	67¼	52⅛
Standard of New Jersey, com.	25	36⅝	36	41⅞	36	46⅜	37⅛	47½	38⅜
Standard of New York	25	31⅝	30¼	34⅛	31	47¼	30⅝	48⅝	40
Sun Oil Co.	..	33⅜	31½	34⅞	30	41⅝	30½	43⅞	38½
The Texas Company	25	47¼	47¼	58	47⅝	58	48	55	42⅜
Texas Pacific Coal & Oil	10	14	13	16⅜	13	19½	12½	23⅜	11
Tide Water Oil	25	*24	*24½	29⅛	27	39¼	27	..	..
Transcontinental	..	4	4	5	4⅛	5½	3	5⅜	3½
Union Oil of California	25	43⅜	42	56½	42⅜	58⅜	37¼	43⅜	33⅛
Union Tank, com.	100	103	*99	102	95	120⅜	84½	‡134	118
White Eagle O. & R.	..	24⅛	24¼	27½	25⅛	29⅞	25⅛	21¾	25⅝
Standard Oils									
Anglo-Amer. Oil	£1	*19	*18¾	21⅝	18¾	19¾	16½	26¾	17½
Borne Scrymser	25	*51	*53	69	53¼	75	65	‡240	205
Buckeye Pipe Line	50	49¾	*48	48½	45	59½	47⅝	72	63½
Chesebrough Mfg. Co.	25	*81½	*79	82	76½	81¼	63	74	48¼
Continental	10	18⅝	19	22⅝	19⅝	25⅞	19¼	31⅛	21⅜
Cumberland Pipe Line	100	94	*91	137	106	137	102	156	128
Eureka Pipe Line	100	*51½	*51	51¼	47	53⅜	43	96	61¼
Galena Signal, com.	100	*10	*10	13½	10¼	32½	9⅞	68½	23½
Humble O. & R. Co.	25	57⅜	57⅛	62⅜	54	99⅝	52	99	42½
Illinois Pipe Line	100	138½	137	140⅛	123⅜	144	131	154½	124
Imperial Oil	..	44¼	44⅛	46	37⅝	39⅜	32½	39⅛	27¼
Ind. Pipe Line	50	*66½	*66½	69½	61	68	52¼	84	87½
International Pet. Co.	10	31½	30½	34⅝	30⅛	35¼	28⅜	25⅜	22⅛
National Transit Co.	12.50	*14	14½	14	13⅝	20⅜	27¼	25½	16½
New York Transit	100	32	*31½	36	31¼	51½	27¼	79	50
Northern Pipe Line	100	*75½	*75½	79¼	70	80½	64	88	67½
Ohio Oil Co.	25	*57	56⅝	64¼	57½	67⅜	55⅜	75¼	60
Penn-Mex Fuel	25	15	*15	19	16½	24¼	15	44	19
Prairie Oil & Gas	25	48½	47½	55½	48¼	60¼	48	65½	45⅞
Prairie Pipe Line	100	*147	*147	151	132	137½	122½	129¾	105
Solar Refining Co.	100	*183	*182	201½	185	212	184½	259	200
So. Penn Oil	25	*36¾	*37	41½	35½	50	35	‡197	139
S. W. Pa. Line	100	*62	*61¼	62½	55½	56	47½	84	50
Southern Pipe Line	50	*18	*18	27¼	15½	27	24	‡103	63
Standard of Indiana	25	65⅞	66¼	74¼	66½	10½	61⅝	70⅝	69½
Standard of Kansas	25	17⅝	*17	20⅞	15⅝	36½	16½	46	30¼
Standard of Kentucky	25	114½	*113	122¼	114⅛	134⅝	108	137	114⅝
Standard of Nebraska	25	47½	*46	49½	46⅜	51⅛	42	‡270	231
Standard of Ohio, com.	100	76½	*73	254	335	362	192½	369	338
Swan & Finch, com.	25	*16	*16	16	15	21	18	27	12
Vacuum Oil	25	108¼	104½	110½	95¼	109⅜	94½	109½	80½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	90	89½	96½	92¼	95	82½	98¼	63⅛
Tidewater Associated	..	17⅜	*18	23½	17½	27	21	..	..

*Bid, no sales. ‡Old stock. †New stock.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Apr. 11	57.37	Mar. 7	59.34	Jan. 31	60.09
Apr. 4	56.63	Feb. 26	60.83	Jan. 24	59.89
Mar. 28	58.51	Feb. 21	60.26	Jan 17	60.38
Mar. 21	58.03	Feb. 14	61.13	Jan. 10	59.42
Mar. 14	59.26	Feb. 7	60.51	Jan. 3	58.94

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Apr. 12		Apr. 5		Mar. 29	
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.06	.06¼	.06¼	.06½	.06½	.06¾
56-58 450 end point	.06	.06¼	.06¼	.06½	.06¼	.06½
58-60 450 end point	.06	.06¼	.06¼	.06½	.06¼	.06¼
58-60 450 end point	.06	.06¼	.06¼	.06½	.06¼	.06½
58-60 437 end point (U. S .Motor)	.06¼	.06½	.06½	.06¾	.06½	.06¾
60-62 400 end point	.06¾	.07	.07	.07¼	.07	.07¼
64-66 375 end point	.07	.07¼	.07¼	.07½	.07¼	.07½
68-70 360 end point	.07½	.07¾	.07¾	.08	.07¾	.08
64-66 437 end point (blend)	.06	.06¼	.06¼	.06½	.06¼	.06½
KANSAS—						
58-60 437 end point (U. S. Motor)	.06½	.06¾	.06¾	.07	.06¾	.07
NORTH TEXAS—						
48-50 450 end point (Naphtha)	.06		.06	.06¼	.06¼	.06½
56-58 450 end point	.06	.06¼	.06¼	.06½	.06¼	.06½
58-60 437 end point (U. S. Motor)	.06⅛	.06¼	.06½	.06¾	.06½	.06¾
60-62 400 end point	.06¾		.06¾	.07	.06¾	.07¼
64-66 390 end point	.06⅞	.07⅛	.07	.07¼	.07	.07¼
64-66 375 end point	.07		.07¼		.07¼	
68-70 360 end point	.07¼	.07½	.07⅝	.07¾	.07⅝	.08
64-66 437 end point (blend)	.06	.06¼	.06¼	.06½	.06¼	.06½
NORTH LOUISIANA—						
58-60 437 end point (U. S. Motor)	.06	.06½	.06½	.06¾	.06½	.06¾
ARKANSAS—						
58-60 437 end point (U. S. Motor)	.06½	.06¾	.06¾	.07	.06¾	.07
PENNSYLVANIA—						
52-54 Naphtha	.09½	.09¾	.09½	.09¾	.09½	.09¾
54-56 Naphtha	.09½	.09¾	.09½	.09¾	.09½	.09¾
58-60 Gasoline	.09	.09¼	.09	.09¼	.08¾	.09
60 Gasoline	.09¾	.10	.09¾	.10	.09¼	.10
62 Gasoline	.10	.10¼	.10	.10¼	.10	.10¼
64 Gasoline	.10¼	.10½	.10¼	.10½	.10¼	.10½
CALIFORNIA—						
58-60 437 end point (U. S. Motor) domestic	.06	.06½	.07	.08	.07	.08
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.06¼	.06½	.06¼	.06½	.06¼	.06½
56-58 450 end point	.06¼		.06¼	.06½	.06¼	.06½
58-60 437 end point (U. S. Motor)	.06¼	.06½	.06½	.06¾	.06½	.07
60-62 400 end point	.06¾	.07	.07	.07¼	.07	.07¼
64-66 375 end point	.07¼	.07½	.07½		.07½	.07¾
68-70 360 end point	.07¾	.08	.07¾	.08	.07¾	.08
64-66 437 end point (blend)	.06¼	.06½	.06½		.06½	.06¾

NATURAL GASOLINE

	Apr. 12		Apr. 5		Mar. 29	
OKLAHOMA (Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04¼	.04½	.04½		.04½	
Grade A, 72-79, 375 e.p., rec. 90%	.04¾	.05	.05		.05	.05¼
Grade BB, 84-92, 375 e.p., rec. 85%	.04	.04¼	.04	.04⅛	.04	.04¼
Grade B, 76-83.9, 375 e.p., rec. 85%	.04⅛	.04¼	.04⅛	.04¼	.04¼	.04½
Grade C, 80-90, 375 e.p., rec. 78%	.04		.03⅞	.04	.03¾	.04
NORTH TEXAS—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04½		.04½		.04½	
Grade A, 72-79.9, 375 e.p , rec. 90%	.04¾	.05	.05		.05	.05¼
Grade BB, 84-92, 375 e.p., rec. 85%	.04	.04⅛	.04	.04⅛	.04	.04¼
Grade B, 76-83.9, 375 e.p., rec. 85%	.04⅛	.04¼	.04⅛	.04¼	.04½	
Grade C, 80-90, 375 e.p., rec. 78%	.04	.04¼	.04		.04	
NORTH LOUISIANA—						
Grade AA, 72-79.9, 375 e.p., rec. 90%	.05¼	.05½	.05¼	.05½	.05¼	.05½
Grade BB, 76-83.9, 375 e.p., rec. 85%	.05	.05¼	.05	.05¼	.05	.05¼
Grade C, 80-90, 375 e.p., rec. 78%	.04¼	.04½	.04¼	.04½	.04½	.04¾
CALIFORNIA—						
75-86, 375 390 end point	.07	.09½	.09	.11½	.09	.11½
CHICAGO DISTRICT (Based on Group 3)—						
Grade AA, 80-87.9, 375 e.p., rec. 90%	.04½		.04½	.04¾		.04½
Grade A, 72-79.9, 375 e.p., rec. 90%	.05		.05	.05½		.05
Grade BB, 84-92, 375 e.p., rec. 85%	.04⅛	.04¼	.04¼	.04¼		.04
Grade B, 76-83.9, 375 e.p., rec. 85%	.04¼		.04¼	.04½		.04¼
Grade C, 80-90, 375 e.p., rec. 78%	.04		.03¾		.03½	.03¾

BURNING OIL

	Apr. 12		Apr. 5		Mar. 29	
KANSAS—						
41-43 water white Kerosene	.04½	.04¾	.04¾	.05	.05	.05¼
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04¼	.04½	.04½	.04¾	.04¾	.05
42-44 water white Kerosene	.04¾	.05	.05	.05¼	.05	.05¼
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04½	.04¾	.04¾	.05	.05¼	.05½
NORTH TEXAS—						
41-43 water white Kerosene	.04¼	.04½	.04⅜	.04½	.04½	.04¾
ARKANSAS—						
41-43 water white Kerosene	.04¾	.05	.04¾	.05	.05	.05¼
PENNSYLVANIA—						
43 Kerosene prime white	.06¾	.07	.06¾	.07	.06½	.06¾
45 Kerosene water white	.06⅞	.07⅛	.07⅛	.07⅜	.06¾	.07
46 Kerosene water white	.07¼	.07½	.07½	.07¾	.07¼	.07½
47 Kerosene water white	.07½	.07¾	.08	.08¼	.08	.08¼
300 Mineral Seal	.08¼	.08½	.08¼	.08½	.08¼	.08½
CALIFORNIA—						
38-40 water white (high burning test)	.05¾	.06½	.07	.07½	.07	.07½
Engine distillate, 43-45 445 end point	.05½	.06	.07	.07½	.07	.07½
Engine distillate, 42-44 480 end point	.04¼	.05½	.06¾	.07¼	.06¾	.07¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.04½	.04¾	.04¾		.04¾	.05
42-44 water white Kerosene	.05	.05¼	.05		.05¼	.05½

FUEL OILS

	Apr. 12		Apr. 5		Mar. 29	
KANSAS—						
24-26 Fuel Oil	1.10	1.15	1.25	1.30	1.30	1.35
32-36 Gas Oil	.02¾	.02⅞	.03⅛	.03¼	.03¼	.03½
38-40 Distillate	.03¼	.03½	.03¾	.04	.04	.04¼
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil	.92½	.95	1.05			
18-22 Fuel Oil	.95	.97½	1.05	1.07½	1.07½	1.10
22-26 Fuel Oil	.97½	1.00	1.07½	1.10	1.12½	1.15
24-26 Fuel Oil	1.02½	1.07½	1.12½	1.15	1 17½	1.20
26-30 Fuel Oil	1.07½	1.10	1.22½	1.25	1.27½	1.30
28-30 Fuel Oil	1.10	1.12½	1.22½	1.25	1 27½	1.30
32-36 Gas Oil (dark)	.02⅝	.02¾	.02¾	.03	.03⅛	.03¼
32-36 Gas Oil (straw overhead)	.02⅝	.02¾	.02¾	.03	.03⅛	.03¼
36-38 Distillate	.03	.03¼	.03¼		.03⅜	.03½
38-40 Straw Distillate	.03¼		.03¼	.03½	.03½	.03¾
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.05	1.10	1.15	1.20	1.20	1.25
32-36 Gas Oil (straw)	.02⅝	.02¾	.02¾	.03	.03⅛	.03¼
38-40 Straw Distillate	.02⅞	.03	.03¼	.03½	.03½	.03¾
NORTH LOUISIANA—						
18-20 Fuel Oil	1.15	1.17½	1.15	1.20	1.20	1.25
32-36 Gas Oil	.03	.03¼	.03	.03¼	.03¼	.03½
ARKANSAS—						
36-38 Distillate	.03¾	.04	.04		.04⅛	.04¼
32-36 Gas Oil (straw)	.02⅞	.03	.03¼	.03½	.03¾	.04
16-20 Refinery Fuel Oil	1.00	1.05	1.05	1.10	1.20	1.22½
GULF COAST (South Texas)—						
Gas Oil	.04¼	.04⅜	.04¾	.05	.05⅛	.05¼
Fuel Oil	1.50	1.60	1.60	1.65	1.60	1.65
PENNSYLVANIA—						
30-34 Fuel Oil	.05⅝	.05¾	.05⅞	.06	.05⅞	.06
36-40 Fuel Oil	.05⅞	.06	.06	.06⅛	.06⅛	.06¼
CALIFORNIA—						
33-36 Distillate	.03¾	.04	.04	.04¾	.04	.04¾
27-32 Distillate	.03¼	.03¾	.03½	.04	.03½	.04
*15-20 Fuel Oil, Bunkers (at tide water)	.92½	1.04	.92½	1.04	.92½	1.04
15-20 Fuel Oil (cargo lots)	.71	.75	.79	.87½	.79	.87½
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars) Group 3	1.05	1.07½	1.15	1.20	1.20	1.22½
22-26 Fuel Oil (sellers' cars) Group 3	1.02½	1.05	1.15	1.17½	1.17½	1.22½
18-22 (Group 3)	1.05	1.07½	1.07½	1.10	1 10	1.15
16-20 (Smackover)	1.17½	1.20	1.20		1 20	1.22½
32-36 Gas Oil (zero)	.02¾	.03⅛	.03⅛	.03¼	.03⅜	.03½
32-36 Gas Oil (industrial)	.02⅝	.02¾	.02¾	.03	.03¼	.03⅜
36-38 Distillate	.03¼		.03¼	.03⅜	.03⅜	.03½
38-40 Straw Distillate	.03⅜	.03½	.03½	.03¾	.03⅜	.03¾

*Bunkers.

LUBRICATING OIL AND WAX

	Apr. 12		Apr. 5		Mar. 29	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06	.06½	.06	.06½	.06	.06½
100 vis., 3 color, 20-25 cold test	.06½	.07	.06½	.07	.06½	.07
150 vis., 3 color, 20-25 cold test	.08½	.09	.08½	.09	.08½	.09
150 vis., 4 color, 20-25 cold test	.08¼	.08¾	.08¼	.08¾	.08¼	.08¾
180 vis., 3 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	1.0
180 vis., 4 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
180 vis., 5 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 3 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
200 vis., 4 color, 23-28 cold test	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
200 vis., 5 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
240 vis., 3 color, 25-30 cold test	.13¼	.14	.13¼	.14	.13¼	.14
240 vis., 4 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 5 color, 25-30 cold test	.12½	.13	.12½	.13	.12½	.13
280 vis., 3 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
280 vis., 4 color, 25-30 cold test	.15¼	.15½	.15¼	.15½	.15¼	.15½
280 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
Cylinder Stocks:						
600, steam refined, light green	.07½	.10	.07½	.10	.07½	.10
600, steam refined, dark green	.05	.06	.05	.06	.05	.06
190-200 vis. @ 210 Bright Stock	.31	.33	.31	.33	.31	.33
150-160 vis. @ 210 Bright Stock	.26		.26		.26	
Waxes:						
124-126 White Crude Scale Wax	.02¾	.03	.02¾	.03	.03	.03⅛
PENNSYLVANIA—						
34 Neutral	.07¼	.07½	.07½	.07¾	.07½	.07⅝
34 Sundebloom Neutral	.08½	.08¾	.08½	.08¾	.08½	.08⅝
36 Miners' Neutral	.07	.07¼	.07¼	.07½	.07¼	.07½
150, 3 color	.28¼	.28½	.28¼	.28½	.28¼	.28½
180, 3 color	.29¾	.30	.29¾	.30	.29¾	.30
200, 3 color	.32½	.33	.32½	.33	.32½	.33
220, 3 color	.34¼	.34½	.34¼	.34½	.34¼	.34½
600, steam refined	.09¾	.10	.10½	.10¾	.10¼	.10½
635, steam refined	.12¼	.12½	.12¾	.13	.12¼	.12½
650, steam refined	.13¾	.14	.14¼	.14½	.13¼	.13½
600, Pennsylvania flash	.17½	.18	.17½	.18	.18	.18½
630, Pennsylvania flash	.28½	.29	.28½	.29	.28½	.29
*550, E filtered	.17½	.18	.18	.18½	.18	.18½
*600, E filtered	.19½	.20	.19½	.20	.19½	.20
600, E filtered	.18	.18½	.18	.18½	.18	.18½
600, D filtered	.25¼	.25¾	.25¼	.25¾	.25¼	.25¾
550, E filtered	.17½	.18	.17½	.18	.17½	.18
550, D filtered	.21½	.22	.21½	.22	.21½	.22
Pennsylvania Bright Stock	.34½	.35	.34½	.35	.35½	.36
†122-124 White Crude Scale Wax	.03¾	.03½	.03⅝	.03½	.03⅞	.04
†124-126 White Crude Scale Wax	.03½	.03⅝	.03½	.03⅝	.03⅞	.04

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.07½	.08½	.07½	.08½	.07½	.08½
No. 3 color, 200 vis., pale oil	.10½	.11½	.10½	.11½	.10½	.11½
No. 3 color, 300 vis., pale oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 3½ color, 500 vis., pale oil	.13½	.14	.13½	.14	.13½	.14
No. 4 color, 750 vis., pale oil	.16	.16½	.16	.16½	.16	.16½
No. 5 to 6 color, 200 vis., red oil	.08½	.09½	.08½	.09½	.08½	.09½
No. 5 to 6 color, 300 vis., red oil	.10	.11	.10	.11	.10	.11
No. 5 to 6 color, 500 vis., red oil	.11½	.12½	.11½	.12½	.11½	.12½
No. 5 to 6 color, 750 vis., red oil	.14½	.15½	.14½	.15½	.14½	.15½
CALIFORNIA—						
130 vis., 2½-3 color	.10½	.11	.10½	.11	.10½	.11
200 vis., 2½-3 color	.11	.11½	.11	.11½	.11	.11½
300 vis., 3 -3½ color	.11½	.12	.11½	.12	.11½	.12
350 vis., 3½-4 color	.12	.13	.12	.13	.12	.13

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

400 vis., 3½-4	color	.13	.15½	.13	.15½	.13	.15½
Red Neutral:							
200 vis., 4½-5	color	.09½	.10½	.09½	.10½	.09½	.10½
300 vis., 5 -6	color	.10½	.11½	.10½	.11½	.10½	.11½
400 vis., 5 -6	color	.12	.13½	.12	.13½	.12	.13½
500 vis., 4½-5	color	.13½	.14½	.13½	.14½	.13½	.14½
500 vis., 5 -6½	color	.12½	.13½	.12½	.13½	.12½	.13½
600 vis., 6½ plus	color	.13½	.14½	.13½	.14½	.13½	.14½

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Apr. 12	Apr. 5	Mar. 29
Gasoline, U. S. Motor, 58-60 437	.09	.09½	.10½
Kerosene, water white, 41-43	.07½	.07½	.07½
*Fuel Oil, bunker "C," 14-16, per bbl.	1.75	1.75	1.75
*Fuel Oil, Diesel, 28-30, per bbl.	2.40	2.40	2.40
Gas Oil, 28 plus	.06	.06	.06
25 pale Paraffin Oil	.12	.12	.12
28 pale Paraffin Oil	.07½	.07½	.07½
285 red Paraffin Oil	.13	.13	.13
250 red Paraffin Oil	.12	.12	.12
225 red Paraffin Oil	.11	.11	.11
200 red Paraffin Oil	.10	.10	.10
Refined Wax:			
120-122 a.m.p., per lb.	.04⅛	.04	.04¼
125-127 a.m.p., per lb.	.04¼	.04⅛	.04⅜
130-132 a.m.p., per lb.	.04¾	.04¾	.05
135-137 a.m.p., per lb.	.05¼	.05	.05¼
Petrolatum, in bbls.; carload lots, per lb.:			
Dark green	.01⅞	.01⅞	.02
Amber	.03⅜	.03⅜	.03⅜
Extra amber	.03¾	.03¾	.03¾
Cream	.05½	.05½	.05½
Lily white	.07	.07	.07½
Snow white	.08⅛	.08⅛	.08½

*Lighterage 6.5c a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Apr. 12	Apr. 5	Mar. 29
Gasoline, U. S. Motor, 58-60 437, in cases	.2440	.2440	.2440
Kerosene, standard white, in cases	.1665	.1665	.1715
Kerosene, water white, in cases	.1765	.1765	.1815
600 steam refined cylinder stock, in bbls.	.19	.19	.19
635 steam refined	.21	.21	.21
650 steam refined	.23	.23	.23
600 Pennsylvania flash	.27	.27	.27
630 Pennsylvania flash	.34	.34	.34
600 Warren E	.26	.26	.26
600 Oil City E	.24½	.24½	.24
Light 135 Bright Stock	.44	.44	.45
Dark 135 Bright Stock	.42	.42	.43

LOS ANGELES EXPORT PRICES

	Apr. 12		Apr. 5		Mar. 29	
Kerosene water white	.04¾	.05	.05¾	.06½	.05¾	.06½
U. S. Motor Gasoline, 53-55 437 e.p.	.07	.07¼	.07¾	.08	.07¾	.08

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

*Corsicana heavy (March 14, 1927)	$1.00
Other fields	See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

*Carson County	$ .95
*Hutchinson County	.95
Gray-Wheeler Counties	See gravity table

*Humble Oil & Refining Co., Magnolia Petroleum Co., Gulf Pipe Line Co. and Kay County Gas Co., March 14.

WEST TEXAS

*Iatan (Same as North Texas)	
Crane-Upton-Crockett	See gravity table

*Includes Howard County and Westbrook Fields. Kay County Gas Co. pays $1.16 for Howard County crude, effective March 12.

ARKANSAS-NORTH LOUISIANA

Cotton Valley (March 17)	$1.00
Bellevue (Feb. 24, 1927)	1.25
Urania (March 16, 1927)	1.00
East El Dorado (March 16)	1.00
Other fields	See gravity table

Note—Cotton Valley and Bellevue, Standard Oil Co. of Louisiana, Gulf Refining Co. and Magnolia Petroleum Co.; Urania, Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co.

GULF COAST

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, High Island, Pierce Junction and Spindletop.)

‡Grade A (March 14)	$1.20
Grade B	See gravity table
*Jennings, La. (March 14)	1.05
†Saratoga, Batson, Dayton (March 14, 1927)	1.20
**Markham March 14	1.00

*Gulf Pipe Line Co. †Sun Pipe Line Co. ‡Humble Oil & Refining Co. and other major buyers. **The Texas Company.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

*Luling (April 7)	$1.00
†Mirando (March 14)	1.00
Rockdale-Minerva (Milam County)	1.25
*Thrall	
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co. Thrall prices same as north central Texas less 19⅛ cents per cwt. freight.

†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective March 14)

Rock Creek, Wyo. (March 12)	$1.25
Salt Creek	See gravity table
Big Muddy (March 12)	1.25
Mule Creek (February 23)	1.30
Grass Creek, light (March 12)	1.33
Grass Creek, heavy	.68
Elk Basin (March 12)	1.33
Lance Creek (March 12)	1.33
Poison Spider	1.00
Notches	.65
Rex Lake (February 23)	1.10
Osage	1.32
Lost Soldier (contract) (May 17)	1.60
Greybull-Torchlight	1.33
Hamilton Dome	1.35
Cat Creek (Mont.)	1.33
Sunburst (Mont.) (October 5)	1.35
Artesia (March 12)	1.00
Rogback (N. Mex.) (March 14)	1.30

Note: Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES
Joseph Seep Purchasing Agency
(Effective March 7)

Penna Grade Oil in New York Transit Line (New York)	$2.15
Bradford District Oil in National Transit Lines (Pennsylvania)	2.15
Penna Grade Oil in National Transit Lines (Pennsylvania)	2.05
Penna Grade Oil in Southwest Pennsylvania Lines (West Virginia)	2.05
Penna Grade Oil in Eureka Pipe Line lines (Pennsylvania)	2.00

(Continued on Page 144)

CRUDE OIL GRAVITY PRICE TABLE

Gravity—	1 Okla., Kans., N. C. Tex., La.-Ark.	2 Smackover, Ark.	3 Stephens, Ark.	4 Wheeler and Gray Counties (Texas Panhandle)	5 Crane, Upton Crockett Counties (West Texas)	6 Salt Creek, Wyo.	7 Grade B & Light Crude (G. Coast)	8 Somerset (South Central Texas)
Below 24	....	1.00	....	....	....	....	....	....
24 to 24.9	....	1.25	....	....	....	....	....	....
Below 25	....	....	....	....	....	....	1.15	....
25 to 25.9	....	....	....	....	....	....	1.17	....
Below 26	....	....	....	....	.70	....	....	....
26 to 26.9	....	....	....	....	.72	....	1.19	....
27 to 27.9	....	....	....	....	.74	....	1.21	....
Below 28	****	....	1.00	....	....	....	....	....
28 to 28.9	1.12	....	1.02	.80	.76	....	1.23	....
29 to 29.9	1.14	....	1.04	.82	.78	1.14	1.25	....
30 to 30.9	1.16	....	1.06	.84	.80	1.16	1.27	....
31 to 31.9	1.18	....	1.08	.86	.82	1.18	1.29	....
32 to 32.9	1.20	....	1.10	.88	.84	1.20	1.31	1.05
33 to 33.9	1.22	....	....	.90	.86	1.22	1.33	1.07
34 to 34.9	1.24	....	....	.92	.88	1.24	1.34	1.09
35 to 35.9	1.26	....	....	.94	.90	1.26	1.37	1.11
36 to 36.9	1.28	....	....	.96	.92	1.28	....	1.13
37 to 37.9	1.30	....	....	.98	....	1.30	....	1.15
38 to 38.9	1.32	....	....	1.00	....	....	....	1.17
39 to 39.9	1.34	....	....	1.02	....	....	....	....
40 to 40.9	1.36	....	....	1.04	....	....	....	....
41 to 41.9	1.38	....	....	1.06	....	....	....	....
42 to 42.9	1.40	....	....	1.08	....	....	....	....
43 to 43.9	1.42	....	....	1.10	....	....	....	....
44 to 44.9	1.44	....	....	1.12	....	....	....	....
45 to 45.9	1.46	....	....	....	....	....	....	....
46 to 46.9	1.48	....	....	....	....	....	....	....
47 to 47.9	1.50	....	....	....	....	....	....	....
48 to 48.9	1.52	....	....	....	....	....	....	....
49 to 49.9	1.54	....	....	....	....	....	....	....
50 to 50.9	1.56	....	....	....	....	....	....	....
51 to 51.9	1.58	....	....	....	....	....	....	....
52 and above	1.60	....	....	....	....	....	....	....

Column 1—Magnolia Petroleum Co. posted new schedule April 7, making price below 33 gravity $1.05 per barrel, with 2 cents increase per degree higher in gravity, taking 33-33.9 gravity at $1.07 as basis, with a top price of $1.45 for 52 and above.

Oklahoma: Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., March 12; Carter Oil Co., The Texas Company, March 14.

North Central Texas—(Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs [Southwest Texas], Iatan and Panola [Magnolia only], Currie, Nocona, Moran and Corsicana light): Texas, Prairie, Sinclair and Gulf, March 12; The Texas Company, Humble Oil & Refining Co., March 14.

Kansas—Prairie, Sinclair, March 12; Carter, Texas, March 14.

Arkansas and North Louisiana—(Caddo, Bull Bayou, Crichton, DeSoto, Haynesville, Homer and El Dorado only): Standard Oil Co. of Louisiana, March 14; The Texas Company, March 14; Magnolia Petroleum Co., Pine Island, Haynesville and Bull Bayou, El Dorado, Gulf Pipe Line Co.. March 14.

Column 2—Standard Oil Co. of Louisiana, The Texas Company, Gulf, Atlantic, March 17, Magnolia Petroleum Co. (March 16) posted price of $1.00 for below 24 degrees and $1.15 for 24 and above. Louisiana Oil Corp. posted following prices effective March 16: Below 24, $1.00; 24 to 27.9, $1.15; 28 to 28.9, $1.17; 29 to 29.9, $1.19; 30 and above $1.21.

Column 3—Atlantic Oil Producing Co., March 14.

Column 4—Humble Oil & Refining Co. and Gulf Pipe Line Co., March 14.

Column 5—Humble Oil & Refining Co., Kay County Gas Co. and Gulf Pipe Line Co., March 14.

Column 6—Midwest Refining Co., March 12, 1927. All crude over 37 gravity, $1.30 per bbl.

Column 7—Humble Oil & Refining Co. and other major buyers (schedule ends "35 and above"), March 14, with exception of Magnolia Petroleum Co. which stops at 31 degrees gravity. Sun Pipe Line Co. posts 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.

Column 8—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

****Prices for crude below 28 gravity: Oklahoma, Kansas and Texas, Magnolia Petroleum Co., $1.10, March 12, 1927; Arkansas, North Louisiana, March 14. Other companies 2 cents less for each degree with exception of Humble Oil & Refining Co. which pays $1.13 for crude below 28 degrees gravity.

CALIFORNIA CRUDE PRICES
***Standard Oil Co.-Union Oil Co. (Effective April 1, 1927)**

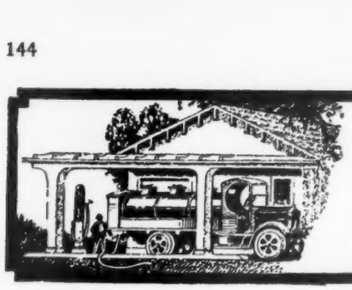
Gravity—	1 Fullerton Seal Beach Long Beach Huntington Beach Richfield-Dom'guez Torrance-Inglewood	2 Whittier La Habra Montebello	3 Kern River Newhall-McKittrick Midway-Sunset Elk Hills Lost Hills Belridge Buena Vista Hills	4 Coyote	5 Santa Fe Springs	6 Coalinga	7 Wheeler Ridge	8 Santa Maria Ventura, Orcutt Salt Lake
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.85	.85	.75	.85	....	.75	.75	.85
16°	.85	.85	.75	.85	....	.75	.75	.85
17°	.85	.85	.75	.85	....	.75	.75	.85
18°	.85	.85	.75	.85	....	.75	.75	.85
19°	.85	.85	.75	.85	....	.75	.75	.85
20°	.85	.85	.77	.85	....	.76	.76	.85
21°	.86	.85	.79	.86	.85	.77	.77	.85
22°	.87	.85	.81	.87	.85	.78	.78	.85
23°	.88	.85	.83	.88	.85	.79	.79	.85
24°	.89	.85	.85	.89	.85	.80	.80	.85
25°	.90	.86	.87	.90	.86	.81	.81	.86
26°	.92	.87	.89	.91	.87	.83	.82	.87
27°	.94	.88	.91	.92	.88	.85	.83	.88
28°	.96	.89	.93	.93	.89	.87	....	.89
29°	.98	.90	.96	.94	.91	.89	....	.91
30°	1.00	.91	.99	.95	.93	.91	....	.93
31°	1.03	....	1.02	....	.95	.93	....	.95
32°	1.06	....	1.05	....	.97	.95	....	.97
33°	1.09	....	1.08	....	.99	.97	....	.99
34°	1.12	....	1.11	....	1.01	.99	....	1.01
35°	1.15	....	....	....	1.03	1.01	....	1.03
36°	1.18	....	....	....	1.06	....	....	1.06
37°	1.21	....	....	....	1.09	....	....	1.09
38°	1.24	....	....	....	1.12	....	....	1.12
39°	1.27	....	....	....	1.15	....	....	1.15
40°	1.30	....	....	....	....	....	....	....
41°	1.33	....	....	....	....	....	....	....
42°	1.36	....	....	....	....	....	....	....

*Column 1—Long Beach, Seal Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richfield and Fullerton, 14 to 30 degrees; Torrance and Inglewood, 14 to 28 degrees; Dominguez, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.

Column 2—Whittier crude, 14 to 22 degrees; Montebello, 14 to 30 degrees.

Column 3—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 24 degrees.

Column 8—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura and Orcutt, 14 to 39 degrees. Posted only by Union Oil Co.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, April 12.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Chicago dist.	16.0	18.0	...	13.0
Decatur, Ill.	16.2	18.2	...	13.1
E. St. Louis	15.1	17.35	...	12.2
Joliet	16.4	18.4	...	13.3
Peoria	16.2	18.2	...	13.1
Quincy	14.2	16.2	...	10.9
Davenport, Ia.	18.5	20.5	2.0	13.3
Des Moines	16.0	18.0	2.0	13.3
Keokuk	18.5	20.5	2.0	13.3
Sioux City	18.1	20.1	2.0	12.9
Duluth, Minn.	19.5	21.5	2.0	13.9
Minneapolis	17.2	19.2	2.0	13.9
LaCross, Wis.	19.2	21.2	2.0	14.0
Milwaukee	18.1	20.1	2.0	12.9
Madison	18.3	20.3	2.0	13.1
Detroit, Mich.	18.8	20.8	2.0	14.7
Grand Rapids	18.7	20.7	2.0	14.6
Saginaw	18.9	20.9	2.0	14.8
Evansville, Ind.	19.0	21.0	3.0	14.0
Ft. Wayne	19.4	21.4	3.0	14.4
Indianapolis	19.2	21.2	3.0	14.2
S. Bend	19.4	21.4	3.0	14.4
Fargo, N. D.	20.9	22.9	2.0	15.9
Huron, S. D.	19.0	21.0	3.0	14.9
Sioux Falls	19.3	21.3	3.0	14.4
*K. C., Mo.	18.0	20.0	3.0	11.6
*Springfield	18.8	20.8	3.0	12.5
*St. Louis	17.6	19.9	2.5	12.3
*St. Joseph	18.5	20.5	3.0	12.2
Wichita, Kans.	16.8	18.8	2.0	11.8
Bartlesville, Ok.	17.0	19.0	3.0	11.8

NAPHTHAS	Tank wagon	Tank car
Oleum spirits	18.0	12.5
V. M. & P. naphtha	20.0	14.5
Cleaner's naphtha	20.0	14.5
Stanisol	21.9	....

Tankwagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL

Less than 100 gallons	10.0
100 to 799 gallons	9.0
800 or more gallons	8.5

Tankwagon prices of gasoline subject to discount of 1 cent a gallon on dumps of 50 gallons or more throughout territory except Chicago district where discount applies only to dumps of 100 gallons. Kerosene subject to 1 cent discount on dumps of 50 gallons or more.

In addition the following quantity discount schedule is in effect on monthly tankwagon deliveries of gasoline 6,000 gallons or more, 1½ cents; 10,000 gallons or more, 2 cents; 15,000 gallons or more, 3 cents. In the Chicago district purchases of 750 to 2,000 gallons a month discounted one-half cent; and, 3,000 to 6,000 gallons, three-quarters cent. If the quantity bought during the year is 12 times the monthly agreed purchases the discount is paid or credited on the entire quantity less monthly payments.

Monthly service station deliveries of 200 gallons or more, and annual deliveries of 2,400 gallons or more are discounted 2 cents.

*State tax 2 cents; remainder city tax.

SOUTHWESTERN DISTRICT

*Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Dallas, Tex.	14.0	17.0	3.0	15.0
Fort Worth	14.0	17.0	3.0	13.0
Houston	16.0	19.0	3.0	15.0
San Antonio	13.0	16.0	3.0	11.0
El Paso	17.0	19.0	3.0	16.0
Texarkana	15 0	18 0	3 0	15 0
Muskogee, Ok.	16.0	19.0	3.0	10.0
Okla. City	16.0	19.0	3.0	10.0
Tulsa	16.0	19.0	3.0	10.0
Little Rock	17.0	20.0	4.0	12.0
Ft. Smith, Ark.	17.0	20.0	4.0	12.0

*The following is the schedule of discounts on quantity gasoline sales adopted by the Magnolia Petroleum Co. in Oklahoma: Over 750 gallons a month, ½c; over 2,000 gallons, ¾c; over 3,000 gallons, 1c; over 4,500 gallons, 1¼c; over 6,000 gallons, 1½c; over 9,000 gallons, 1¾c; over 10,000 gallons, 2c. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1c; over 300 gallons a month, 1¼c; over 400 gallons, 1½c; over 500 gallons a month, 1¾c; over 600 gallons, 2c. The same rule applies for annual purchases as in the tankwagon discounts.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
*New Orleans	17 5	18 5	3 0	14 0
Alexandria	15.0	18.0	2.0	14 0
Baton Rouge	14.0	17 0	2.0	12 5
LaFayette	15.0	18.0	2.0	13.5
Lake Charles	15.5	18.5	2.0	14.0
Shreveport, La.	14.0	17.0	2.0	13.0
Memphis, Tenn.	17.0	20.0	3.0	14.0
Chattanooga	19.5	22.5	3.0	15.0
Knoxville	19.5	22.5	3.0	15.0
Nashville	16 6	19.5	3 0	15.0
Bristol	19.0	22.0	3.0	14.0
Lit. Rock, Ark.	17.0	20.0	4.0	12.0

*Tax of 3c includes city tax of 1c.
†Louisiana kerosene prices include 1-cent state tax and 1 cent parish tax.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
All Ohio points	20.0	22.0	2.0	15.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Atlanta, Ga.	20.0	23.0	4.0	15.0
Augusta	20.0	23.0	4.0	15.0
Macon	20.0	23.0	4.0	16.0
Savannah	20.0	22.0	4.0	15.0
Birm'ghm, Ala.	20.0	23.0	4.0	15.5
Mobile	19.0	22.0	4.0	15.0
Montgomery	21.0	24.0	5.0	16.5
Clarksd'le, Miss.	19.0	22.0	4.0	13.5
Jackson	19.0	22.0	4.0	14.5
Natchez	18.5	21.5	4.0	14.0
Gulfport	20.5	23.5	6.0	14.0
Vicksburg	18.5	21.5	4.0	14.0
Jack'ville, Fla.	18.0	21.0	4.0	14.0
Miami	20.0	23.0	4.0	15.5
Pensacola	19.0	22.0	5.0	15.0
Tampa	18.0	21.0	4.0	14.0
Covington	21 0	24 0	5 0	16 0
Louisville	20 0	23 0	5 0	16 0
Lexington, Ky.	20.0	23.0	5.0	16.0

In addition to the state tax of 3c on gasoline, Montgomery has city tax of 1c on gasoline and ½c on kerosene. Prices in Georgia include ½c inspection fee on gasoline and kerosene; in Florida, an inspection fee of 0.125c; in Alabama, an inspection fee of ½c on kerosene only. Pensacola tax includes 1c city levy. Gulfport tax includes privilege tax of 3c in addition to state tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Pittsburgh, Pa.	17 0	*22 0	...	15 0
Philadelphia	16.0	21 0	...	15 0
Scranton	17.0	*22 0	...	15 0
Allentown	17 0	*22 0	...	15.0
Altoona	17 0	*22 0	...	15 0
Erie	14 0	19 0	...	15 0
Dover, Del.	20 0	23 0	2.0	15.0
Wilmington	20 0	23 0	3.0	15.0
Spring'd, Mass.	20 0	22 0	...	16 0
Worchester	20 0	22.0	...	16 0
Boston	20 0	22.0	...	15 0
Providence, R.I.	21 0	23 0	...	16.0
Hartford, Conn.	22 0	24 0	2 0	16 0
New Haven	22 0	24 0	2.0	16 0

*Includes tax of 2 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Atlantic City	16.0	...	...	14 0
Newark, N. J.	16 0	18.0	...	14 0
Annapolis, Md.	20 0	...	4 0	14.0
Baltimore	20 0	21.0	4 0	10 0
Cumberland	20 0	21 0	4.0	14 0
Washington	18 0	21.0	2 0	12.0
Danville, Va.	20.5	....	4 5	14 0
Norfolk	20 5	23 5	4 5	14.0
Petersburg	20 5	23 5	4 5	14.0
Roanoke	20 5	23 5	4.5	14.0
Richmond	20.5	23.5	4.5	14.0
Charleston, W. Va.	19 5	22.5	3 5	14.0
Keyser	19 5	....	3 5	14 0
Parkersburg	19 5	22 5	3 5	14.0
Wheeling	19.5	22 5	3 5	14 0
Charlotte, N. C.	20 0	23 0	4.0	14 0
Hickory	20.0	23 0	4.0	14 0
Mt. Airy	20 0	23 0	4.0	14 0
Salisbury	20 0	23 0	4 0	14 0
Charl'stn, S. C.	20.0	23 0	5 0	14.0
Columbia	20 0	20 0	5.0	15.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Albany, N. Y.	19 0	21 0	...	16.0
*New York	19 0	23 0	...	16 0
Buffalo	18.0	21 0	...	14.0
Rochester	18 0	21 0	...	14 0
Syracuse	19 0	21 0	...	16 0
Boston, Mass.	19.0	21 0	...	15 0
Augusta, Me.	22 0	26.0	3.0	16 0
Manchester, N. H.	21.0	23 0	2 0	16 0
Burlington, Vt.	21.0	23.0	2.0	16.0

*Price in steel barrels.

PACIFIC COAST DISTRICT

Standard Oil Co. (California

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
San Francisco	13 0	17 0	2 0	15.5
Los Angeles	14 5	16.5	2 0	15 5
Fresno	13 0	17.0	2.0	17.5
Reno, Nev.	19 0	23 0	4 0	19.0
Portland, Ore.	14.0	18 0	2 0	16.5
Seattle, Wash.	13 0	17 0	2 0	16.5
Tacoma	13 0	17.0	2 0	16.5
Spokane	15 0	19 0	2 0	20 5
Phoenix, Ariz.	19.0	23.0	3.0	20.5

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Omaha	16 25	19 25	2.0	13.25
McCook	19.75	21.75	2.0	14.75
Norfolk	18 0	20.0	2.0	13.75
N. Platte	19.75	21.75	2.0	14.50
Scottsbluff	19.25	21.25	2.0	14.00

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incids tax of	Tank wagon
Denver, Colo.	17 0	19 0	2 0	15.5
Pueblo	17 0	18 0	2 0	15.5
Grand Junction	20 5	22.5	2 0	19.0
Casper, Wyo.	18 0	20 0	3 0	14.0
Cheyenne	20 0	22.0	3.0	15.5
Butte, Mont.	22.0	22.0	3.0	19.0
Helena	22 0	24 0	3.0	19.0
Salt Lake, Utah	21 0	23 0	3 5	17 0
Boise, Idaho	23.5	25 5	4 0	19.0
Twin Falls	23.5	25.5	4.0	19.0
Albuquerque, N. M.	22 0	25.0	5.0	18.0

TANK WAGON CHANGES

March 31—Standard Oil Co. of Louisiana reduced the gasoline tank wagon and station prices 1½ cents in Nashville, Tenn.

April 5—Magnolia Petroleum Co. reduced the gasoline tank wagon 1 cent at Dallas, Fort Worth and San Antonio, Tex. The station prices were reduced 2 cents at Dallas and San Antonio.

April 5—Atlantic Refining Co. reduced gasoline tank wagon and station prices 1 cent in Pennsylvania, Delaware, Massachusetts, Rhode Island and Connecticut, and reduced kerosene 1 cent to 16 cents in these states except in Boston where it remained 15 cents. The Erie gasoline tank wagon was reduced 2 cents and the service station price 3 cents.

April 6—Standard Oil Co. of California reduced the gasoline tank wagon and station prices 2 cents in Spokane, Wash.

April 7—Standard Oil Co. of Indiana reduced kerosene one-half cent in Quincy, Ill.

April 9—Standard Oil Co. of Kentucky reduced the gasoline tank wagon and service station prices in a number of Kentucky points 1 cent but did not change the prices at Louisville, Lexington and Covington. The kerosene tank wagon was reduced one-half to 1 cent throughout Kentucky.

April 11—Standard Oil Co. of Kentucky reduced the gasoline and kerosene tank wagon and station prices 1 cent in Georgia, Florida and Alabama and the kerosene price 1 cent in Mississippi.

April 12—Standard Oil Co. of New York reduced the gasoline tank wagon and station prices 1 cent.

CRUDE PRICE CHANGE

April 7—Magnolia Petroleum Co. in Oklahoma, Kansas and Texas, posted $1.05 per barrel for all oil below 33 gravity, made 33.0 to 33.9 gravity oil $1.07 and set a 2-cent increase in price for each degree increase in gravity making 52 gravity and above, $1.45. Magnolia reduced Luling crude 5 cents to $1.

April 11—Graybull Pipe Line Co. reduced Somerset crude 15 cents, making all oil below 33 gravity $1.05 and set a 2-cent differential for each degree difference in gravity making the price on all oil 38 gravity and above, $1.17.

MUST AGAIN APPEAL AGAINST LEGISLATION

Representative oil men from Tulsa, Bartlesville, Ponca City, Okmulgee, Oklahoma City, Ardmore and other points met in the assembly room of the Mid-Continent Oil & Gas Association in Tulsa Friday afternoon to discuss the proposed Initiative Petition No. 98 now being circulated in Oklahoma with a view to levying a severance tax of 2 per cent on oil and gas produced in the state, in addition to other taxes.

Henry McGraw, vice president of the Gypsy Oil Co. and president of the Kansas-Oklahoma division of the Mid-Continent Oil & Gas Association presidede at the meeting.

Unanimous sentiment against the proposed bill was expressed by the delegates present when a pool was taken, this notwithstanding that certain exemptions against advalorem taxes are contained in the proposed measure for the benefit of refiners and tank farms of stored oil.

None of the revenue to be raised by the bill is to be devoted to the general expenses of the state government it was shown, therefore, no reduction in taxes would result to other taxpayers. The exemptions were considered as a sop to certain companies in order to prevent them opposing the bill. Most of the companies thus affected were represented at the meeting and voted with the others to institute an educational campaign against the proposed measure notwithstanding the exemptions.

President McGraw indicated that equipping the 60,000 wells of the state with meters as required by the bill would cost the industry $60,000,000 and would be the means of returning a negligible amount of additional revenue from escaping gas which the meters are designed to measure.

It was also stated that the bill would be unfair in that it had the effect of shifting too great a proportion of the total taxes paid by the industry onto the non-integrated producer of oil who owned no refinery or tank farm.

The meeting voted to authorize the president to appoint a committee of six to supervise a campaign against the bill. This committee consists of: Henry McGraw, Gypsy Oil Co., chairman; C. C. Berndon, Skelly Oil Co.; W. C. Franklin, Tidal Oil Co.; John Kane, Phillips Petroleum Co.; Wirt Franklin, Ardmore; W. E. Wood, Kingwood Oil Co., Okmul-

CRUDE OIL PRICES

(Continued from Page 143)

Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	$ 2.85
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) March 16	1.40
Corning 35-cent grade oil in Buckeye Pipe Line Co.'s line (March 17)	1.45
Corning 25-cent grade oil in Buckeye Pipe Line Co.'s lines (March 17)	1.55
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) March 16	1.50
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky)	.95
Keister (Pennsylvania)	1.35

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective March 14)

Lima	$1.71
Wooster	1.77
Illinois	1.60
Indiana	1.48
Princeton	1.60
Plymouth	1.33
Waterloo (Nov. 17, 1926)	1.35
*Western Kentucky	1.35
†Cumberland, Barren, Clinton and Monroe Counties, Kentucky (March 16)	1.50
‡Oil in lines of Stoll Oil Refining Co. in Oil City, Ky. (March 16, 1927)	1.50
†Clay County, Tennessee (November 18)	2.35
§Oil Springs (Canada)	2.18
‖Petrolia (Canada)	2.11

*Posted by Ohio Oil Co.
†Posted by Paragon Development Co.
‡Posted by Stoll Oil Refining Co.
‖Posted by Imperial Oil Co., Ltd.

MEXICO

(Effective May 13)

*Tuxpam light (f.o.b. Mex. ports)	$1.35
†Panuco heavy (f.o.b. Mex. ports)	1.15
Tuxpam (New York)	2.15
Panuco (New York)	1.80

*Plus 32.328c tax. †17.631c tax.

This SIGN invites the careful motorist into your station!

THE meaning of this sign is becoming more and more widely known to alert and careful motorists. When they see it on your station they *know* that you are a Dealer who not merely sells oil, but *gives correct lubrication.*

The Dealer who shows this Sign asks the man who drives in for oil—*"What is the mileage on your speedometer?"* Then he consults the Sinclair Recommendation Index and gives the motorist exactly the right grade of Opaline to fit the degree of wear in the car's engine and *seal* its power!

May we tell you about this successful method of selling *correct lubrication* with the full line of Opaline Motor Oils?

SINCLAIR REFINING COMPANY, INC.

Also Makers of Sinclair Gasoline and H-C Gasoline

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Atlanta Boston Chicago Houston Kansas City

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MOTOR OIL

Seals Power at every Degree of Wear

Brief Items for Plant Operators

VACUUM PROBLEM IN GASOLINE MANUFACTURE AT BURKBURNETT

By M. V. Enright*
Skelly Oil Co.

It is just possible that no other field has gone as far as Burkburnett in the maximum vacuum exerted on the wells. I know of several plants in this district where a vacuum of 28 inches, based on a normal barometer of 29.30, elevation approximately 1,000 feet above sea level, is being maintained at scrubber tanks on incoming lines to plants. It is my opinion that the use of a spring gauge should be discarded as it is inaccurate. It is common practice to use only the mercury "U" tube in vacuum determinations. It is also necessary that a plant be equipped with an accurate barometer, as the range of barometric pressure here is from 28.40 to 29.70 and I believe I am correct when I say that the Weather Bureau has reported in this immediate locality a low of 28.30. It is now evident that in checking up the vacuum on a plant or casinghead it will be quite necessary to consult the barometer.

It will no doubt be of interest to those who are not actually connected with, or charged with the responsibility of maintaining this abnormally high efficiency, to know what means or effort is required to that end. Starting from the plans for a vacuum instillation, a selection must necessarily be made of a standard vacuum pump of the proper size to handle the predetermined volume of gas, as well as a careful calculation must be made of the necessary horsepower required to operate the unit. Consideration of both the vacuum pump as well as the power unit to operate the pump is sure to be made, for it is necessary to guarantee the operation of this machinery 24 hours of the day, 365 days of the year. A vacuum such as that maintained in this district will not permit of shutting down on every little pretext and taking any old time to start up. Spare parts for vacuum pump and power unit must be on hand and ready to install without delay.

It is imperative that proper scrubber tanks be placed at the plant on incoming lines to vacuum pumps in order to protect machines from rust and grit. A vacuum on the discharge of vacuum pumps of from 8 to 16 inches is ordinarily maintained.

Testing Pumps

In preparing new pumps for starting, owing to the fact that the cylinders as well as pistons, piston rings, rods, and valves have been protected with No-Oxide and other rust preventatives, it is necessary to pull pistons and valves and thoroughly clean parts before starting up. Valves should be tested with gasoline to know they are tight before replacing.

In the routine of plant operation it is necessary frequently to check each vacuum cylinder against a closed intake gate valve to know that the individual cylinder is doing its work. A broken or leaky intake or discharge valve can quickly be detected in this manner.

The average manufacturers guarantee on new machines is that they will test up to within five-tenths of an inch of the barometer against a closed suction. We have recently started a 27 by 16 Duplex vacuum pump that checked out within three-tenths of the barometer.

The piston rod packing is another fruitful source of trouble, not alone from the standpoint of poor pump efficiency, but a loss of gasoline production from air infiltration troubles into the vacuum system will be treated separately at this meeting, as it is an ever-present source of trouble for the plant, and it is again evident that the amount of vacuum that is exerted in the field is going to hinge on the air percentage in the total amount of gas handled by the pump. This not only is important from the standpoint of plant efficiency, but also from the angle of plant safety.

With a compression plant maintaining up to the 250 pounds pressure on the high compressors, it is evident that there is a constant source of danger present from air percentage creeping up to an explosive mixture. Again, as residue from the plant is ordinarily used to operate the gas engines in the plant as well as the powers and engines of the field, it is quite necessary to keep the air percentage down, as 20 per cent of air in the incoming gas to the plant will result in around 55 per cent air in the residue. These figures are based on gas in the Burkburnett district.

Size of Vacuum Lines

It is evident that the decision as to the size of vacuum lines in the gas gathering system cannot be left to guesswork, but must be carefully worked out; and in the final installation of the gathering system great care must be taken in laying and testing out for leakage this system of lines. It would be manifestly poor business to design and build an expensive plant and then reduce the size of the gathering system to the extent that a drop of several inches of vacuum would be experienced from the plant to the casingheads. It is again apparent that even where a small amount of gas is handled under this high vacuum it is necessary to install large lines and meters to handle and measure the gas.

Taking up a standard textbook of the industry, we find a table of multipliers for reducing gas volumes or meter

(Continued on Page 149)

* Paper presented at Wichita Falls, Tex. meeting of the Association of National Gasoline Manufacturers.

EXPLOSION UNSOLVED; INVESTIGATING AT PARCO

Sixteen men were killed and several injured in an explosion Wednesday, April 6 at the Parco, Wyo. refinery of the Producers & Refiners Corp. The cause of the explosion which occurred at 5:30 a. m. has not been determined. An official investigation is now being conducted.

The explosion occurred in the cracking division of the refinery's operation. The company has operated a battery of 10 Dubbs cracking units ever since the refinery was built about three years ago. Most of the property damage was confined to the cracking equipment. Two storage tanks caught fire and were partially burned. The property damage at the plant was estimated between $500,000 and $750,000. A small property damage due mainly to broken windows, was reported in the town of Parco where the refinery employes live.

Following is a list of the dead: W. W. Dodd, Frank M. Taylor, Victor Montaya, K. M. Sherman, Orcelo Martinez, Fred Jesmer, Clarence Posey, A. C. Ayala, F. C. Speyer, G. G. Turpin, Victor Nickerson, E. R. Welch, John Paul Palmer, Calvin Smith, Albert Smith, George Currey.

The injured are: P. L. Welsh, George B. Polk, Thomas Whiting, W. G. Turner, J. H. Pitts, K. R. Sickles.

CUDJO GASOLINE PLANT WORLD OUTPUT RECORD

The Cudjo natural gasoline plant of the Sinclair Oil & Gas Co., located in Section 35-9-6 of the Seminole Field of Oklahoma, will be enlarged by the installation of four more units giving the plant a rated capacity of 25,000,000 feet of gas daily.

The plant at present has an output of approximately 80,000 gallons of gasoline daily. In actual output the plant is believed to be the largest in any of the fields of the entire world. The present production exceeds that of the No. 6 plant of the Sinclair company located in the Garber Field of Oklahoma which in the past has been considered the largest single plant of the natural gasoline industry from the standpoint of gasoline output.

The Seminole gas used by the Sinclair company is averaging between four and five gallons of gasoline per 1,000 feet. With the additional four units the plant will have an output of 100,000 gallons daily. A large part of the present output is being shipped to coastal refineries of the Sinclair company.

PLAN GASOLINE PLANT IN SOMERSET FIELD

Oscar J. Berend and associates of Tulsa have entered into a contract with the producers of the Somerset Field of Texas covering the purchase of casinghead gas in that field. The contract provides that a natural gasoline plant will be built to handle the gas in the field by next fall.

This will be the first natural gasoline plant to be built in the Somerset Field. About 5,000,000 feet of gas is available daily with a gasoline averaging two gallons per 1,000 feet. The field is 18 miles southwest of San Antonio. The initial capacity of the plant will be 3,500,000 feet daily with provision made to enlarge the capacity as needed.

BUY SWEETWATER PLANT BUT OPERATION DELAYED

A. R. Stribling and J. R. Travis of Duncan, Okla., with associates, have purchased the 2,000-bbl. skimming plant of the Sweetwater Refining Co., located at Sweetwater, Tex. This plant has been shut down for some time.

According to Mr. Stribling the new owners do not expect to operate the plant at this time. The plant will be made ready to operate and later when market conditions are improved it will either be operated at Sweetwater or moved to a new location.

BUILD GASOLINE PLANT

AMARILLO, Tex., Apr. 11.—The Federal Gasoline Co. is expecting its new gasoline plant in Section 13, Block Y, of M. & C. Survey, in South Hutchinson Field, to be finished and in operation early in April. It will have a minimum capacity of 10,000 gallons a day. It is on the Pantex Pipe Line Co. leases.

AMONG THE TECHNICAL MEN

V. R. Oakley, superintendent of the Wichita, Kans., refinery of the Barnsdall Refineries, Inc., is one of several Mid-Continent operators who climbed from the bottom round of refining experience through the many departments until he was placed in charge of plant operations. His first job at a refinery was of water boy in 1911 at the Kansas Oil & Refining Co.'s refinery located at Coffeyville, Kans. He was 15 years old at that time.

V. R. Oakley

A year later he was a pumper at the plant. He held various positions at the plant and was finally made superintendent. In 1917 he resigned to accept employment at the Cushing, Okla., refinery of the Shaffer Oil & Refining Co. He served as stillman and treater and held other positions at this refinery which is complete in its operations.

He remained with the company for three years, resigning to become superintendent of the Okmulgee, refinery of the Phillips Highway Oil Co. This company was later known as the Waite Phillips Co. Under his supervision the plant was practically rebuilt and its operations enlarged.

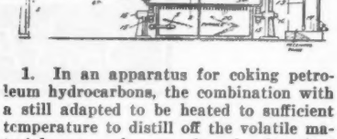
In 1925 the Waite Phillips Co. purchased the Wichita, Kans., refinery of the Sterling Oil & Refining Co. and Mr. Oakley was transferred to that plant. This plant had been shut down for some time and many improvements have been made since he was placed in charge.

He continued as superintendent of the refinery when the Waite Phillips properties were purchased by the Barnsdall interests. The plant now has a rated crude capacity of 5,000 bbls. daily with cracking equipment.

RECENT PATENTS

(Additional Patents on Page 175)

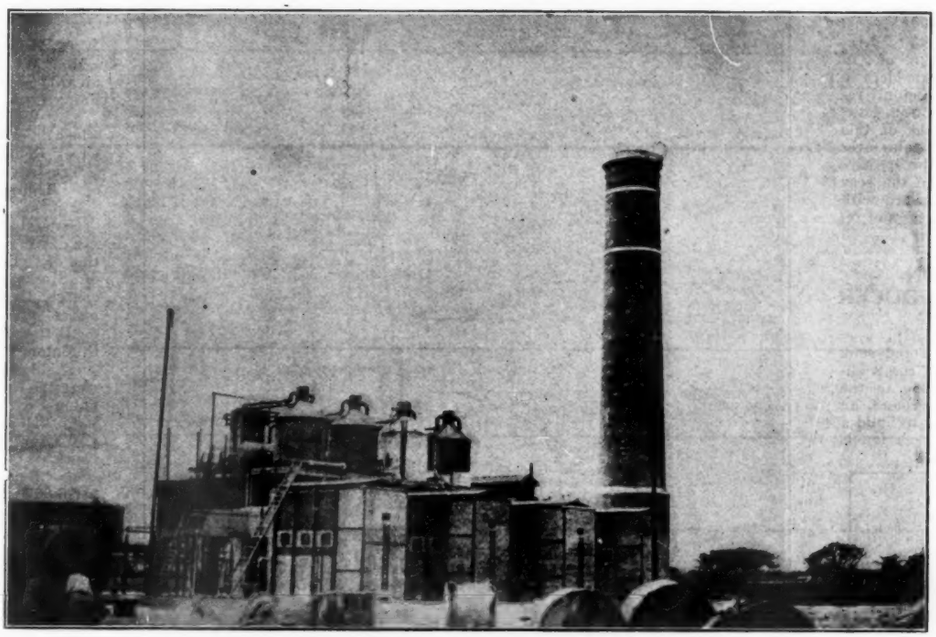
1,622,573. Coking Still. Roy Cross, Kansas City, Mo., assignor to Gasoline Products Co. of New York, N. Y., a Corporation of New York. Filed Apr. 12, 1924. Serial No. 706,020. 6 Claims. (Cl. 196—122.)



1. In an apparatus for coking petroleum hydrocarbons, the combination with a still adapted to be heated to sufficient temperature to distill off the volatile material, means for scraping the deposited carbonaceous substance from the still walls, and a container supported in the still for maintaining said removed carbonaceous material out of contact with the shell of said still, said scraping means mounted upon the container.

FOSTER

TUBE STILLS



Three Foster Oil Heaters installed at Tampico, April, 1921, and still in continuous operation except for occasional shutdowns for cleaning.

OVER 500 Foster Tube Stills are operating with a high degree of efficiency in topping crude oil, re-running distillates, recovering light oils, continuous distillation, distilling crude coal tar, cracking, producing lubricating stock, preheating cooling oil vapor, heating asphalt, refining vegetable oils, and many other industrial oil heating operations.

Write for Catalog

POWER SPECIALTY COMPANY

111 Broadway, New York

Branches in All Oil Centers

OIL SECURITIES WERE ACTIVE AND IRREGULAR

(Continued from Page 141)

cember 31, 1926, shows net income of $2,045,227 after depreciation, interest, Federal taxes, etc., equivalent after allowing for regular annual dividend requirements on the 7 per cent preferred stock, to $4.81 a share (par $25) earned on outstanding 325,000 shares of common stock. This compares with $1,442,710, or $4.31 a share, in 1925.

The consolidated income account for 1926 compares with 1925 as follows:

	1926	1925
Net after depreciation	$6,590,013	$5,264,818
Expenses	4,369,899	3,674,255
Operating profit	$2,220,114	$1,590,563
Other income	313,813	232,959
Total income	$2,533,927	$1,823,522
Interest, etc.	170,200	167,312
Federal taxes	318,500	213,500
Net income	$2,045,227	$1,442,710
Preferred divs.	*605,150	40,833
Common dividends	650,000	672,500
Surplus	$ 790,077	$ 729,377

*Five quarterly dividends.

"The new major oil pools discovered during 1926, viz., Seminole, Spindletop, Panhandle and Long Beach, greatly increased production and it was feared might have a tendency to curtail operations," Louis Brown, president of Oil Well Supply Co., says to stockholders in remarks accompanying the annual report. "I am pleased to advise you, however, that the first two months of this year show an increase in our sales over the same period of 1926 and prospective developments for the balance of the year indicate that we may look forward with assurance to a gratifying business and resulting profits for 1927."

MANY PROBLEMS CONFRONT OIL PRODUCER

(Continued from Page 32)

construction was rendered null and void.

Tank trouble forms a part of the Seminole operators' grief, and owing to the soft, spongy condition of the ground, an average of 21 days is necessary to build a large tank from the time the location is staked until the roof is placed in position. This is more than double the ordinary time required for constructing a 55.

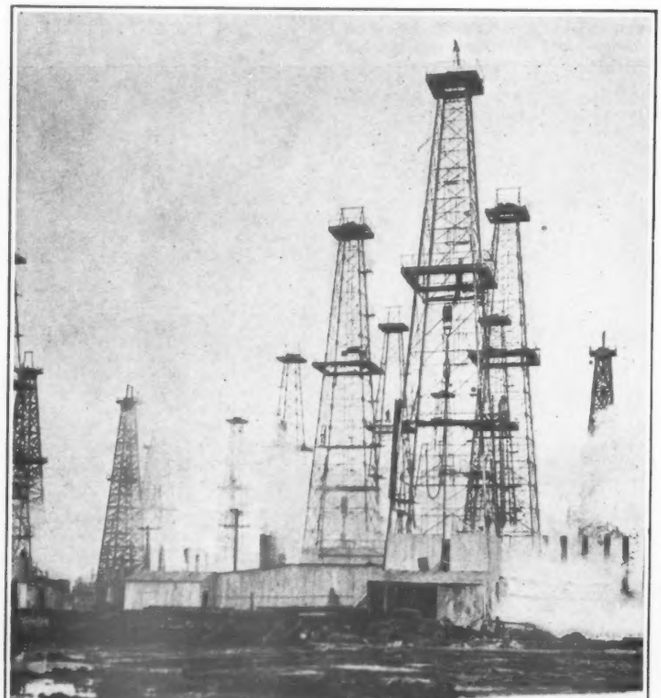
With many wells nearing completion at Seal Beach the cry has gone up "Give us tanks." Big ones, little ones, tall ones and low ones are being used. The type of tank depends often on the size of acreage. The picture above shows tall tank going up alongside the road.

Problems at Seal Beach

The Seal Beach Field in California presents a tank problem on the Pacific Coast. The crude purchasing companies in that field entertain little affection for the huge output, and fail to become enthused over the prospects of big wells. This has naturally caused a steel storage building campaign by the producers, who are greatly hampered in their desires by the fact that Seal Beach is a town-lot drilling proposition, and two acres is a large lease. Limited in area, the operators of this field make up the difference by constructing tanks of limited diameter, but by building them much higher than ordinary tank practice. The pictures show the various sized tanks being used in the operations. Wherever possible, tanks are being built three rings high, and in some instances they almost surround the drilling rigs.

One of the pictures shows the close position of rigs at Seal Beach, where the drilling crews swap stories with each other. The closeness of tanks to the drilling rigs may be noted in the case of one tank, which is right up against the derrick leg.

Paul Getty, an operator in this field, found his own troubles in handling his crude. Unable to dispose of his production in the field, and limited in area, he leased a battery of large tanks 15 miles away, and the picture shows truck tanks being used to transport crude from the flow tanks to the rented battery of stock tanks in another location. It is possibly one of the first times in the history of the industry that truck tanks have been used for this purpose, and merely furnishes another instance of the ingenuity of the oil producer when trouble looms upon the horizon. The truck tanks used in this operation differ from ordinary truck tanks in that they are hitched to a trailer, which also mounts a tank and, instead of the engine pulling one tank of crude, it must pull two.



Work being done at Seal Beach. Slight blur in picture is due to steam from operations.

FRY POOL IS GREAT SHALLOW OIL FIELD

(Continued from Page 30)

Practically all of the activity now is centered around the southwestern corner of The Texas Company's Lowe property. Spudders and machines are rattling along merrily in this vicinity. Wentz Oil Corp. is drilling three additional holes on its 10 acres purchased recently from Forsythe and others for $62,500. The No 1 on this 10 acres came in for 260 bbls. a few weeks ago and went up to 700 bbls. after a shot. J. K. Hughes Developing Co. is also carrying on a spirited drilling campaign around his big No. 3 Shore and The Texas Company is drilling several new ones along the south line of the Lowe lease.

The leases shown on the accompanying production table under the heading "Greater Fry District" are so labelled because this Fry District seems destined to connect in much the same manner as the Cross Cut Field farther north in the same country. The White Pool, the Eads Pool, the Andrews and the Byler will probably all connect up when the final story is told, although they are now separated from each other by several dry holes. A dry hole in Brown County doesn't mean an awful lot, as Cross Cut and Blake Pool operators can tell you. A 400-bbl. well may be found at the next location on the other side of it. Therefore, after all the drilling is done, the various pools mentioned will probably be separated by very small strips of dry territory. As the production report shows, however, the properties outside of the main pool have not compared favorably with the leases around the discovery.

Four Pipe Lines

The Fry Pool is served by four pipe lines. Prairie Oil & Gas Co. has a 6-inch gravity line from the field to its Thrifty station, situated a mile north of the cross-roads town of Thrifty. One 4-inch line runs from this station to the Gwinnup Pool in Coleman County where Prairie has a larger station than its present needs require, and thence to the Fleming station in the Pioneer Pool of Eastland County. The other 4-inch line out of Thrifty station runs direct to the Fleming station.

The Texas Company has a looped 4-inch line from the field to its Eddington station southwest of Cross Cut, from which point the oil is pumped to the company's Pioneer station.

The Humble Pipe Line Co. has a 4-inch line from its Perry station to the Pickett station at Cross Cut and are now looping this line for a distance of 5 miles. The Perry station is also being increased from 2 units to 3 which will give it a capacity of 300 bbls per hour.

The Sinclair-Texas Pipe Line Co. has 7 miles of 4-inch line from the Sinclair lease in the pool to a loading rack on the Santa Fe west of Bangs.

Like most wildcat discoveries, the Lester well has been the source of many stories regarding the manner in which it was located and the reasons why it was drilled in that particular spot. If it had been drilled 600 feet westward it would probably have been dry. Nevertheless, it was drilled on surface geology and the original location was not the result of accident. The surface contours, as mapped before the discovery was drilled, show a rather pronounced anticline extending west and northwest across that portion of Brown County and extending into Coleman County. This anticline was named after the town of Thrifty through which it extends.

ANNOUNCE PROGRAM FOR N. P. A. MEETING

(Continued from Page 30)

Oil Industry"—H. C. Dickinson, chief, heat and power division, Bureau of Standards.

b. "Activities of the Association in Connection With Tests and Testing Methods"—A. W. Scott, trustee in charge, Department of Standards and Tests.

c. "The Technique of Viscometry"—W. S. Zehrung, Pennzoil Co.

d. "What Is the Actual Cold Test of an Oil?"—MacLean Houston, United Refining Co.

e. "What Actually Constitutes a Flash?"—Dr. F. W. Breth, Franklin Creek Refining Co.

Trustees meeting at lunch, 1 p. m.

Thursday Afternoon, April 28

2 p. m. E. M. Lyons presiding.

General subject: Trade and Commerce.

a. "A program for (a) Standardization of Cylinder Stocks and (b) Statistics of Stocks"—E. M. Lyons, trustee in charge, Department of Trade and Commerce.

"Better Business Standards"—Herbert G. Eaton, Mutual Refining Co.

c. "Some Phases of Trade and Commerce"—Harry W. Schmidt, United Refining Co.

d. "How to Use Refinery Statistics"—Warren Platt, National Petroleum News.

e. "Remarks"—Fayette B. Dow.

f. "The Association's Finances"—G. B. Hunter, treasurer.

g. "The Association's Membership"—Thomas J. Hilliard, trustee in charge, Department of Membership and Relations.

Thursday Evening, April 28

Fellowship supper, 7:30 p. m.

Fred G. Clark in charge of entertainment. Good fellowship, good entertainment, no speeches!

Friday Morning, April 29

10 a. m. Howard H. Greene presiding.

General subject: Manufacture.

a. "Recent Developments in Petroleum Manufacture"—W. E. Perdew.

b. "The 1927 Co-operative Engineering Program in Operation"—Herbert A. Ross.

c. "Heat Exchange in Refineries and Conservation of Water"—Howard H. Greene, Kendall Refining Co.

d. "Central Station Power"—J. B. Northrup, Ohio Valley Refining Co.

e. "Antiknock Properties of Motor Fuels"—Dr. Gustav Egloff, Universal Oil Products Co.

General subject: Cost Accounting.

P. S. Tarbox presiding.

a. "Refinery Cost Accounting"—Paul C. Girard, Marland Refining Co. Mr. Girard's paper will be discussed in its practical application to:

Filter House—P. S. Tarbox, trustee in charge, Department of Economics, Accounting and Statistics.

Wax House—Speaker to be announced.

Stills—Speaker to be announced.

Friday Afternoon, April 29

2 p. m. Frank B. Fretter presiding.

General subject: Traffic and Transportation.

a. "The General Petroleum Rate Investigation."

b. "What the Association's Traffic Department is Doing"—Willis Crane,

traffic attorney, National Petroleum Association.

Group meeting of traffic managers immediately following Mr. Crane's remarks.

New or unfinished business. The trustees will meet immediately after the close of the meeting.

VACUUM PROBLEM IN GASOLINE MANUFACTURE

(Continued from Page 145)

readings. The following is a sample of reducing to four ounce pressure basis, gas under vacuum:

In. of Mercury Vacuum	4 ounce Multiplier or Density	Example Meter reading Cu. Ft Gas	Reduced to 4 ounce Net Gas
—28	.04488	100,000	4,488
—27	.07838	100,000	7,838
—26	.11188	100,000	11,188
—25	.14535	100,000	14,535
—24	.17885	100,000	17,885
—23	.21236	100,000	21,236
—22	.24586	100,000	24,586
—21	.27936	100,000	27,936

Where orifice meters are used in the measurement of gas in the field it is necessary that the differential be the lowest possible reading. It is easy to determine the cut in vacuum you actually experience by the chart reading in the inches of water differential; therefore it is vitally important that the proper sized plate be selected.

In the Burkburnett Townsite, as well as the West Field, we have a distinct handicap in the "back vacuum" that has built up in the producing sand, amounting to 21 inches. It is not hard to see what happens when a string of tubing is pulled. I think the time is at hand when the producer should adopt the use of Armour casingheads in pulling tubing. To my mind, the enormous inrush of air to the sand when the operation of pulling tubing is under way, is of permanent injury to the well. With the use of Armour casingheads which are in successful use in the old vacuum fields of the country, practically all air infiltration into the well is eliminated while pulling a string of tubing.

NORTH TEXAS MARKET IS FURTHER WEAKENED

WICHITA FALLS, Tex., Apr. 11.—The fourth cut in Mid-Continent crude, which was made during the middle of last week by the Magnolia Petroleum Co., and the Standard of New York 1 cent tank wagon cut April 11, further weakened a tottering market in the North Texas area. Although the price cut in crude had not been met by other companies early Monday afternoon, its effect was still a factor in the refined market with refiners in doubt as to what other crude purchasing companies would do.

No one product in the North Texas market could be pointed out as much stronger than another and the market as a whole was classed as soft all the way down the line. Some are of the opinion that the bottom has not been reached while others look for an upward trend soon.

Several refiners shut down their cracking plants 15 or 20 days ago and as a result a big batch of gas oil and fuel oil was thrown on the market. Although the railroads apparently are always in a position to take a bargain, their buying has not relieved the situation and the result is a weaker market in fuel.

In the Wichita Falls district, natural gasolines have been moving fairly steadily, but the bulk of the movement is on contract. Otherwise that market is down with other products. In some instances Grade BB is being shipped on Grade C orders.

In Fort Worth as well as Wichita Falls, no particular interest is being evinced in any product and the last crude cut is causing everyone to "sit tight and await developments."

One refiner, with a surplus of gas oil, offered a large order considerably under the generally accepted quotation for that particular product without any results. While refiners are divided as to their opinion on the bottom of the market all are of the opinion no immediate relief is in sight.

MID-CONTINENT SECTION A. S. M. E. HOLDS SECOND ANNUAL MEETING

By W. T. Ziegenhain

The Mid-Continent section of the American Society of Mechanical Engineers held its second annual meeting in Tulsa April 7. The program included three papers of interest for "Oil Power Week" presented during the afternoon with a banquet at night. New officers were elected for the year, the chairmanship going to C. R. Barton, chief engineer for the Tidal Oil Co. W. G. Heltzel, engineer of the Sinclair Pipe Line Co., was elected vice chairman; T. G. Laney, engineer of the Smith Separator Co., secretary, and A. J. Kerr retained the office of treasurer.

The first paper was read by L. A. Mekler, an engineer with the Universal Oil Products Co., and covered the design and operation of pressure still furnaces for burning oil. Much of the data were the results of his own tests. He stated that the problem of fuel efficiency had been given less attention by the refiners than other industries using oil fuel, even though they use less of it and are more scattered geographically so that the exchange of data is more difficult. He presented a new thought in the design of furnaces so far as the oil industry is concerned when he predicted the extensive application of the principle of indirect heating similar to the muffle furnaces used in the ceramics works.

As an explanation of their design he stated that the flames were shot into small tunnels made of a highly refractory material and by maintaining the normal combustion efficiency the temperature of the oil could be raised to any practical limit even though there was a temperature drop of approximately 500 degrees Fahrenheit through the refractory material. The lesser replacement of tubes and the higher combustion efficiency of this type of furnace affords advantages that are attractive to the refiners particularly for cracking installations as many plants are finding the maintenance costs of improperly constructed or poorly operated furnaces are high.

The next paper was prepared and read by S. P. Young, engineer with the Sinclair Pipe Line Co., titled "Fuel Oil Problems for Pipe Line Pump Stations." The complete paper appears elsewhere in this issue.

Railroad Use of Fuel Oil

The final paper was by Robert Collett, fuel agent of the St. Louis, San Francisco Railway Co. His discussion gave the viewpoint of the railroads in their use of oil fuel and pointed out that the annual fuel oil consumption by the railroads in the United States is in excess of 70,000,000 bbls.

In a comparison of prices on coal and oil over the last five years he showed the increased cost of the use of oil However, Mr. Collett declared the advantages of the use of oil have more than offset the price difference. The comparison of the prices is shown at the conclusion of this article. First of importance in the advantages of fuel oil is cleanliness of special importance for passenger train use during the warm weather. The fire hazard is reduced and he pointed out the use of oil was required in some parts of the country in protecting forest reserves. In a tabulation of the additional advantages, Mr. Collett pointed out that there is less deterioration in the heating value, no labor troubles in the oil industry to shut off the supply, a saving in handling, and no labor expense for cleaning fires and pits.

He showed a very broad attitude in speaking of the specifications on the fuel required and said that he considered fuel oil as the residual product of the refineries and that it was not made to meet a narrow set of specifications as other petroleum products. Any oil that would burn was fuel oil, as he considered it. However, he said he was sometimes sold fuel oil that was loaded with water. In closing he said the railroads would take the fuel oil whenever they could get it and were taking a liberal attitude in their dealings with the refiners as they recognize that their welfare is dependent upon that of the refiners in the oil regions.

Comparative Prices of Fuel Oil and Coal*

Year	Cost Coal per Ton	Cost Fuel Oil Bbl.	Cost of Equiv. Fuel Oil
1921	$4.10	$1.30	$4.55
1922	3.94	1.24	4.34
1923	3.45	1.20	4.20
1924	3.03	1.35	4.72
1925	2.72	1.50	5.25
1926	2.63	†1.50	†5.25

*These figures are for the United States as a whole and for all grades of fuel oil and do not altogether apply to the fuel oil used by the railroads in the Mid-Continent where the average price of the fuel oil used in 1925 was $1.32 per barrel and in 1926 was $1.24 per barrel. †Estimated.

TEXAS PANHANDLE

(Continued from Page 40)

200 bbls. After a 100-quart shot the well responded with 800 bbls. production. No. 9 is a 250-bbl. well after a 120-quart shot at 2,898 to 2,940 feet, total depth 2,947 feet. Prairie Oil & Gas Co. and associates' No. 28 Johnson Brothers-A, Section 21, Block Y, was a 75-bbl. well in lime pay at 2,981 to 3,039 feet but completed as a 240-bbl. well after a 60-quart shot in lime at 3,009-37 feet. Skelly Oil Co.'s No. 6 J. A. Whittenburg, M. Whitley Survey, is swabbing 20 bbls. daily after an 80-quart shot in lime at 2,784 to 2,816 feet.

Wheeler County

Upham Gas Co.'s No. 1 R. W. Griswold, Section 1, Block 24, was completed as a 15,000,000 foot gas well at 1,790 to 1,828 feet; total depth 1,828 feet.

DAILY AVERAGE PRODUCTION, AMARILLO DISTRICT
Week Ending April 9, 1927
Hutchinson County

Company—	Wells	Daily Av. This Week
Alaska Pet. Co.	1	15
Amerada Pet. Corp.	9	705
American Ref. Co.	7	375
Apex Oil Co.	2	650
Badger Oil Co.	2	60
Bain and others	1	100
Barnsdall Oil Co.	2	140
R. G. Barnum	1	10
Black Diamond Oil Co.	1	15
Block Y Pet. Co.	1	...
Blockins & Kistler	2	250
Buffalo Oil Co.	2	140
Canadian River Oil Co.	6	325
Center Dome Oil Co.	2	15
Centerfield Oil Co.	1	5
Coble-Whittenburg	4	350
Continental Oil Co.	1	5
Currie Bros. and J. R. Phillips	3	670
Cockrell & McElroy	4	325
Collier & Taylor	1	15
Delmar Oil Co.	2	25
Derby Oil Co.	8	1,710
Devonian Oil Co.	8	440
Dixon Creek Oil Co.	39	7,045
Double Five Oil Co.	1	50
Douglas Oil Co. and Cline	2	...
E. J. Dunnigan and others	2	190
Echo Oil Co.	3	1,925
Empire Gas & Fuel Co.	26	3,600
Fly Blackburn Oil Co.	2	60
Four Y Oil Co.	1	...
Franterhouse & Wetzel	1	40
Gates Oil Corp. (F. E. Kistler)	4	220
Goldelline Oil Co.	5	510
Golding & Phillips	1	5
Gopher Oil Co.	1	...
Grimes & Watts	1	25
Gulf Prod. & Panhandle Ref.	54	5,555
Gulf Prod. Co.	36	4,685
L. R. Hagy	1	...
Heywood and others (Prairie and others	1	15
J. K. Hughes Dev. Co.	22	1,560
Holmes, Currie & McKnight	3	140
W. H. Holmes	2	150
Homestead Oil Co.	1	15
Hutchinson Co. Oil Co.	1	...
Dan A. Japhet	5	320
Julian Pet. Corp. (Canyon)	5	700
Kistler Oil Co.	3	550
Kistler & Lenix	2	400
Lenix Oil Co. and others	1	60
J. H. Lenix	1	10
Lenix & Patterson	2	325
Lucky 10 Oil Co.	4	325
Manhattan Oil Co.	1	85
Marland Oil Co.	59	3,540
Midwest Exploration Co.	20	3,685
Minnehoma Oil Co. & Kistler	2	565
McMan Oil & Gas Co.	18	2,100
McIroy & Herring	6	600
S. D. McIlroy	4	275
S. D. & W. W. McIroy	8	625
McIlroy Bros. and others	4	575
J. H. Middleton	4	200
Mudge Oil Co.	1	5
Murchison & Fain	2	175
Newby Oil Co.	2	45
New Domain Oil Co.	3	105
Pantex Oil Co. (Westex)	9	1,100
Phillips & Heywood	3	490
Panhandle Oil Co.	1	...
Paramount Oil Co.	1	150
J. R. Phillips and others	5	2,100
Phillips Pet. Co.	198	25,800
Prairie O. & G. & Phillips Pet.	65	12,080
Plains Drilling Co.	1	10
Pure Oil Co.	3	495
Relief Oil Co.	3	460
Henry Riley	1	100
Riley & Holmes	2	75
Rock Island Oil Co.	1	...
Roxana Pet. Corp.	9	680
Ryan Pet. Co.	4	250
Skelly Oil Co.	25	2,555
Skiatex Oil Co.	7	1,010
J. L. Smith	2	220
Smith & Barnum	2	40
Southwestern Oil & Dev. Co.	4	970
Spring Creek Oil Co.	4	560
Summit Oil Co.	3	430
Sunny Jim Oil Co.	5	205
Sunburst Oil Co.	2	200
Sunrise Oil Co.	1	...
J. A. Swindler & Son	1	...
The Texas Company	1	60
Tex-O Oil Co.	1	10
Triangle Oil Co.	3	350
J. D. Ward and others	3	195
White Eagle Oil & Ref. Co.	25	1,400
J. O. Whittington	1	...
Total Hutchinson County	845	99,400
Average per well	...	117.8
Carson County		
Amarillo Oil Co.	1	...
American Ref. Co.	9	750
Champlin Ref. Co.	2	80
Delmar Oil Co.	1	60
Empire Gas & Fuel Co.	2	120
Gates Oil Corp.	1	5
Gulf Prod. Co.	16	245
Hughes Development Co.	1	25
Magnolia Pet. Co.	1	220
Marland Oil Co.	21	1,705
Marston Oil Co.	1	170
McMan Oil & Gas Co.	5	1,105
Nunn & McAuley	3	860
Parks and others	1	270
Prairie Oil & Gas Co.	1	605
Republic Prod. Co.	1	20
Roxana Pet. Corp.	11	1,400
W. W. Silk and others	3	80
Skelly Oil Co.	3	120
Southwest Oil & Dev. Co.	1	5
Sunny Jim Oil Co.	2	...
The Texas Company	13	510
Total Carson County	101	8,355
Average per well	...	82.7
Gray County		
Canyon Oil Co.	1	10
Empire Gas & Fuel Co.	3	35
Gulf Prod. Co.	13	960
Humble Oil & Refining Co.	10	405
Magnolia Pet. Co.	19	575
McMan Oil & Gas Co.	10	655
Marland Oil Co.	1	5
Nabob Oil Co.	1	65
Osborne & Daniels	1	10
Phillips Pet. Co.	6	620
Prairie O. & G. Co. and Atlantic and Shamrock	16	1,705
Pure Oil Co.	5	310
Roxana Pet. Corp.	1	35
Sun Oil Co.	3	110
The Texas Company	5	385
Wilcox-Pampa Oil Co.	18	2,130
Young and others	1	10
Total Gray County	114	8,025
Average per well	...	70.4
Moore County		
Cadman and others	1	...
Potter County		
Amarillo Oil Co.	1	35
Wheeler County		
Continental Oil Co.	3	310
Gibson Oil Corp.	6	540
Laycock and others	1	...
Magnolia Pet. Co.	2	480
Marland Oil Co.	1	720
Mid-Continent Pet. Corp.	1	10
Murchison & Fain	1	40
Mid-Kansas Oil & Gas Co.	2	270
Midwest Exploration Co.	2	10
World Oil Co.	2	45
The Texas Company	1	60
Total Wheeler County	22	2,485
Average per well	...	113
Grand total Panhandle	1,083	118,300
Average per well	...	109.1

AMERICAN LEADERSHIP DOMINANT AT MEETING

(Continued from Page 34)

or low speed, high or low compression, hot or cool engine, rich or lean mixture, and regardless of the timing of the spark.

Sulphur Compounds

Considerable work is being undertaken by the various laboratories, to learn more about the sulphur compounds in petroleum and its products as a means of perfecting refining methods. A summary of the published information to date was presented by P. Borgstrom and E. E. Reid, as preliminary work on this problem being studied by the American Petroleum Institute.

As a part of the work being done on this same subject F. W. Lane and John Devine presented original data on the qualitative detection of sulphur in petroleum and its distillates. In the test which they have developed, sulphur may be detected in oils containing as little as .02 per cent sulphur.

M. A. Youtz and P. P. Perkin added materially to this subject by presenting their original data on the desulphurizing action of 95 per cent sulphuric acid, aluminum chloride, and silica gel on naphtha solutions of ethyl sulphide, iso-

amyl sulphide, phenyl sulphide, benzyl sulphide, n-pri-heptyl sulphide, n-4-sec-heptyl sulphide, isoamyl disulphide, allyl sulphide, ethyl disulphide, tetramethylethylene sulphide, trimethyl thiophene, and trimethyl ethyl thiophene. Each compound was dissolved in a straight run cleaners naphtha so that the solution contained 0.4-06 per cent of sulphur. The results show that the action of sulphuric acid is chiefly a solvent action. Aluminum chloride affects all the compounds except ethyl and n-heptyl sulphides. Disulphides are largely decomposed under these conditions only as far as mercaptans. Silica gel removes sulphur from all the solutions, but the thiophenes are least affected, then the disulphides and the tetramethylethylene sulphide. Fullers earth at 400 removes all but the thiophenes fairly well. The use of methyliodide and mercuria iodide in conjunction is shown to be a very effective means of extracting aliphatic sulphides from petroleum fractions.

Quantitative Determination

W. F. Faragher, J. C. Morrell and G. S. Monroe continued the discussion of the reactions of sulphur compounds and presented a procedure for the quantitative determination of sulphur and its derivatives of hydrocarbons in petroleum products. The methods used were detailed as follows:

"Hydrogen sulphide is determined as cadmium sulphide by precipitation with an acidified solution of cadmium chloride. Elementary sulphur is determined by shaking the sample with metallic mercury and filtering off the mercury sulphide formed. A lamp determination before the treatment with mercury and another after the treatment give by difference the percentage of elementary sulphur. The mercaptans may be determined by one of two methods.

Method No. 1. (Faragher, Morrell, & Comay.) The sample is dissolved in benzol after removing sulphur and hydrogen sulphide and is shaken with alcoholic plumbite. The lead mercaptides formed are dissolved in the alcohol and a lamp determination upon the oil will give by difference the sulphur in mercaptans.

Method No. 2. The oil freed from sulphide and sulphur is treated with a suspension of basis lead acetate; the lead sulphate is filtered. The remaining acid combined with the washings is titrated and the mercaptan equivalent to the acid which combined with the lead mercaptides is calculated. Both of these determinations are made upon aliquot portions.

"The oil freed from hydrogen sulphide and sulphur is refluxed with a dilute acid solution, using either hydrochloric or sulphuric acid (approximately 10 per cent), together with zinc. Glacial acetic acid, which is soluble in the oil, may be substituted for the hydrochloric and sulphuric acids. The disulphides are reduced to mercaptans. The oil is then treated with alcoholic sodium plumbite in order to remove the mercaptans which have been formed. A lamp determination gives the sulphide and residual sulphur in the reduced oil. The sulphur in disulphides is found by subtracting the mercaptan sulphur previously determined from the combined disulphide and mercaptan sulphur. The use of the titration method at this stage gives unexplained results, in that the percentage of mercaptans found must be multiplied by a factor of 3/2 in order to obtain the correct result. Hence, it is advised that the extraction with alcoholic plumbite be used.

The oil at this stage is treated with mercurous nitrate, which removes the sulphides. A lamp determination gives the sulphur in residual sulphur. The sulphide sulphur is determined by difference."

Doctor Solution

The next paper on this general subject was presented to explain the complication reactions of the "doctor" solution in the treatment of petroleum distillates and was presented by J. C. Morrell and W. F. Faragher. Their conclusions were that "oxygen alone did not sweeten any of the pure mercaptans, and the addition of caustic-free lead sulphide did not help. Oxygen and sodium hydroxide sweetened and benzyl mercaptans, showing that the sodium mercaptides are more readily oxidized than the mercaptans. Substituting sulphur for oxygen sweetened all the mercaptans but not the gasoline. Lead sulphide, oxygen, and sodium hydroxide sweetened all the mercaptans as did sodium plumbite, but the gasoline was not sweetened in either case.

"When lead sulphide, sodium hydroxide, oxygen, and sulphur were used, all the mercaptans were sweetened in less than 3 minutes, and the gasoline was sweetened in 10 minutes. Several pure mercaptans were converted to the corresponding sulphides by lead sulphide, sodium hydroxide, and oxygen. The disulphides were then reduced with zinc and glacial acetic acid."

A study of the formation of wax crystals and the factors affecting wax yields were discussed by several authorities in the presentation of their original work. D. G. Padgett and D. G. Hofley showed that synthetic paraffins, as well as the natural, show decided predominance of plate crystals when pure. The crystal systems may be trichlinic, monoclinic or orthorhombic.

C. E. Roistle's work was then presented to show the effect of the loss of volatile constituents, chilling by the gas lifting the oil, radiation of heat to surrounding strata, etc., on the deposition of wax.

Determining Wax Content

A. French, W. J. McGill and F. W. Sullivan, Jr. included the results of their study on the relative solubilities of waxes and indicated that an attempt to predict the wax content of paraffin distillates by chill or cloud points are subject to considerable errors.

The same authors also presented a paper showing the heat of solution of paraffin wax found in distillates of Mid-Continent crude is 40.3 calories per gram or 72.5 B.t.u. per pound. The use of this value instead of 63.27 B.t.u. as commonly used was found to give more concordant results in calculating the heat balances for the chilling of wax distillates.

GAS MEN GATHER IN DALLAS, TEXAS

(Continued from Page 33)

Gas Corp. of Tulsa read the first paper that brought about an interesting and lively discussion. The subject was "the Trend of Gas Measurement." His paper was illustrated with slides showing improved methods of meter installation. Following the lengthy discussion of his paper, another was read by F. M. Rosenkrans, Gas Service Co., Kansas City. His paper dealt with building the house-heating load.

Other important papers scheduled for the meeting were "Pipe Line Flow Formulae," by E. L. Rawlins of the Bartlesville, Okla., station of the United States Bureau of Mines; and "Cleaning Gas in Transportation Lines," by Walter Reid, consulting engineer, Dallas.

Tomorrow's session of the convention will be devoted to discussions of different subjects of interest to the natural gas industry.

While the city has not been selected for the next quarterly meeting, it is likely Shreveport, La., will be chosen.

NORTH AND WEST TEXAS

(Continued from Page 39)

feet. Moore and others' No. 1 Matthews also failed at 2,009 feet.

Wichita County

R. Cook's No. 3 Throckmorton was a duster at 1,965 feet. Cooper & McLaughlin's No. 4 Lowe also failed at 1,832 feet. L. P. Hammond's No. 2 Boyd pumped 10 bbls. at 699-707 feet; No. 3 was dry at 706 feet. J. W. Hooser's No. 7 Mitchell-B found sand at 1,861-64 feet and made 10 bbls. Ryan Petroleum Co.'s No. 91 Nance was abandoned as dry at 1,843 feet. Sheldon and others' No. 4-A Frank had sand at 1,647-63 feet and pumped 50 bbls. The Texas Company's No. 322 Waggoner pumped 35 bbls. at 1,732-47 feet. The Texas Company's (formerly Golding-Cochran and others') No. 1 Waggoner made 35 bbls. of oil at 1,274-82 feet.

Wilbarger County

The location of Cullum and others' No. 1 Ancell was abandoned. Fain-McGaha Oil Corp.'s No. 7 Fluhman pumped 56 bbls. at 1,472-97 feet; No. 5 Waggoner-E had sand at 1,958-94 feet and pumped 210 bbls. Humble Oil & Refining Co.'s No. 21 Waggoner-M pumped 29 bbls. of oil from sand at 2,363-84 feet. Phillips Petroleum Co.'s No. 2 Waggoner-H found sand at 2,305-82 feet and pumped 129 bbls.; No. 16 Waggoner-NN made 9 bbls. of oil from sand at 2,589-92 feet. Prairie Oil & Gas Co.'s No. 4 Waggoner-B found sand at 2,301-10 feet and pumped 35 bbls. of oil.

Young County

Boller and others' No. 2 Gragg pumped 105 bbls. at 740-59 feet. Magnolia Petroleum Co.'s No. 2 Bloodworth made 12 bbls. at 539-53 feet. Reed and others' No. 3 Matthews was good for 30 bbls. from sand at 712-50 feet. Winemiller Oil Co.'s No. 1 Miller was dry at 847 feet.

OFFICERS AND DIRECTORS RE-ELECTED BY PRAIRIE

At the annual meeting of stockholders of the Prairie Oil & Gas Co., held Tuesday night at Independence, Kans., all officers and directors were re-elected as follows: W. S. Fitzpatrick, chairman of the board; Nelson K. Moody, president; Dana H. Kelsey, vice president and general manager; E. T. Patterson, treasurer, and J. A. Hollihan, secretary.

CALIFORNIA GASOLINE TEMPORARILY STABLE

LOS ANGELES, Calif., Apr. 9.—Since the recent flurry of price reductions the gasoline market seems to have settled down at a price of 14¼ cents per gallon, including 2-cent state tax, in the Los Angeles area. While there have been rumors circulating that the Pan American Petroleum Co. would again reduce prices 2 cents, in the face of present marketing conditions it is very doubtful if this company would take such a step. It looks as if prices would stay where they are for the next few weeks at least. The large marketing companies apparently believe that low prices will prevail for some time as evidenced by their wholesale laying off of men wherever possible with a view of cutting expenses to a minimum. The Standard Oil Co. of California has definitely committed itself to a policy of retrenchment at this time and among other things has stopped work on its new cracking units being installed at its El Segundo refinery. This company has been selling under contract wherever possible certain of its service stations and has discontinued other stations entirely so that in the past few months it has actually decreased its number of service stations by about 100.

Even though first-grade gasoline seems to be at an extremely low price, so-called "bootleg" gasoline is selling still lower. The majority of this gasoline is being quoted at the rate of eight gallons for $1, but there are several stations which are selling at as low as 10 gallons for $1.

The natural gasoline market continues weak. Prices have gone down along with the price of U. S. Motor gasoline and are at the lowest figure for over two years. There is practically no demand for this commodity among the larger companies as they already have more than they can use and would rather sell than buy. No immediate improvement in the natural gasoline market is apparent.

The kerosene market broke along with gasoline, prices for high-test domestic kerosene now ranging around 6 cents. Export kerosene has slumped, this commodity selling generally at 4¾ to 5 cents per gallon.

With the new price schedule for gasoline and crude, it is once again possible for California refiners to sell their gasoline at the Atlantic Seaboard in competition with that market. Just how much California gasoline will move in this trade, however, due to the reduction in price, is problematical as it is not only a question of the demand for this product on the part of eastern markets, but also the possibility of obtaining tank bottoms in which to move it. The tanker problem is still a very serious one and it is very questionable if exports of motor gasoline to the Atlantic Seaboard will increase to any degree due to the inadequacy of transportation facilities.

A. O. M. A. Convention At Chicago Is Marked By Interest in Lubs

CHICAGO, Apr. 12.—The convention of the American Oil Men's Association opened at the Congress Hotel this morning with the exhibits all in place and everything ready for what the management expects will be a well-attended meeting. There was nothing on the program for the morning and the early registration was light but toward the hour of the luncheon with which the program began there was more activity at the desk. Up to the noon hour the report was that 130 had registered. Many oil companies were entertaining in their own rooms and the number of oil men present was larger than this total.

A noticeable feature of the exhibits and also of the program was the prominence given to lubricating talks and displays. A feature of the luncheon was a vaudeville program which will be repeated in the exhibit hall after the session. A different program will be given each day. Following the luncheon the regular program was taken up, Secretary Gilmore announcing a number of entertainments which will be provided for visitors by their hosts, the Chicago oil men.

The election of directors and officers takes place at a closed meeting Wednesday morning. Only about one-third of the directors hold over and the remainder with the officers are to be chosen. It is not expected that there will be many changes in the list of directors and officers.

GEORGE C. ARMSTRONG LEAVES INDIAN CO.

CHICAGO, Apr. 12. — George C. Armstrong, vice president of the Indian Refining Co., in charge of refinery operation, resigned today, effective immediately. His successor has not been announced.

George C. Armstrong

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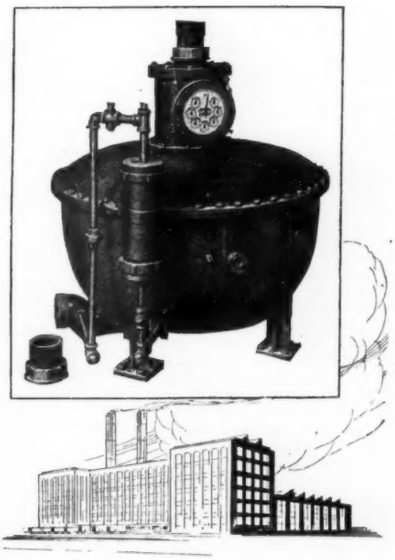

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OKLAHOMA FUEL OIL PRICES DECLINE

(Continued from Page 28)

that the average refiner will have to look to his gasoline price to offset the declines in these other products. This argument is presented by those who continue to believe that gasoline prices are at bottom regardless of any developments in the crude market.

Gasolines and Naphtha

With trading continuing slow, most of the refiners were quoting 6¼ to 6½ cents for 58-60 U. S. Motor gasoline. Buying has been fairly well limited to the day-to-day needs. Characteristic of the unsettled market, it is understood that some gasoline orders are being taken for 6⅛ cents.

A continuation of the narrow price differential between 58-60 437 endpoint gasoline and 60-62 400 endpoint gasoline indicates the weakness of the natural gasoline market and the desire on the part of the refiner to make less gasoline from the crude and more kerosene, or to make both the 400 endpoint gasoline and then a heavy 437 endpoint gasoline into which 20 or 30 per cent natural gasoline can be blended. This practice is limited to the ability of the refiners to move the 400 endpoint gasoline; but because the use of the lower endpoint gasolines is being standardized by several companies at their stations and the general trend is toward the use of lower endpoint gasolines, the refiners are finding an increasing market for their production.

Over the early part of the week, an inquiry was made on 64-66 375 endpoint gasoline for export. This, up to Tuesday, had failed to develop into any actual purchases. Most of the sellers were quoting 7 cents. Naphtha at 6 cents has weakened with the lower gasoline prices and the unchanged natural gasoline market.

Kerosene and Distillates

Kerosene continued to fall off, and yielded one-fourth cent on each of the 41-43 and 42-44 grades during the last week. The demand was fair, as might be expected with the increased consumption of that product in the farming areas, but there were sufficient offerings to force the price to the lower figure. The only distillates being sold are for immediate delivery. There was no change in the prices being quoted.

Fuel and Gas Oils

Both gas oil and fuel oil prices are lower. There is relatively little difference in the prices of the various grades of fuel, and in some cases prices on the higher gravity fuels are being quoted a little above the 32-36 gas oil price. This is due to the higher heating value of the heavier grades; and as the industries and railroads are now equipped to handle the heavier fuels, there are no inducements in favor of the lighter gravities. As it pays to crack the gas oil at the present price of the charging stock, even with gasoline at 6¼ cents it is probable that the gas oil price will not continue to show the rapid decline it has over the last two weeks. The fuel market developed considerable weakness over the last week and was consistently about 10 cents a barrel lower than that of last week on all grades.

Natural Gasoline

The natural gasoline market remained practically unchanged from that of a week ago. The weakening of the refinery gasoline prices were not equally reflected in the natural gasoline prices, with the manufacturers quoting a minimum of 4 cents for the C grade, which is one-eighth cent above the minimum of last week.

Lubs and Wax

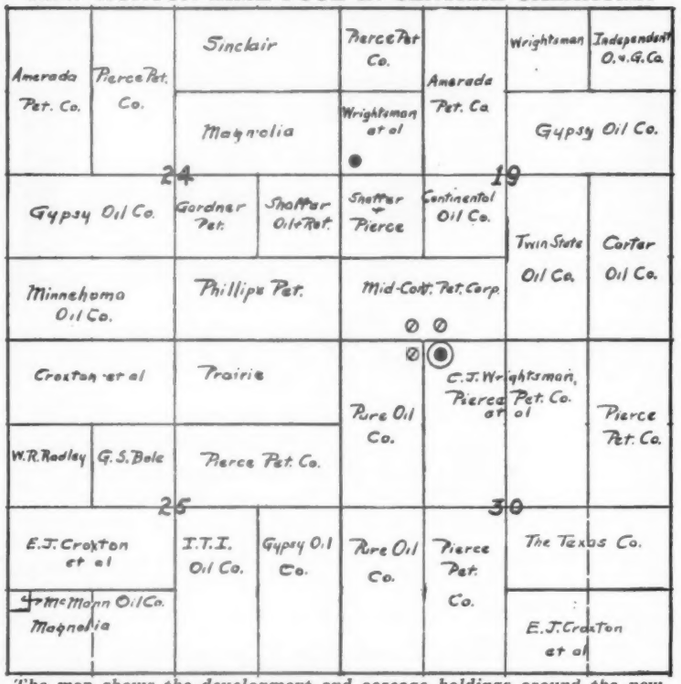
There was no change in the lub prices compared to those of a week ago, but the bright stock market was not strong. Wax was weak at 2¾ to 3 cents, with practically no trading being done. One buyer stated that he was offered 124-126 material at 3 cents over the remainder of the year.

NEW WELL ATTRACTS ATTENTION TO HUNTON

(Continued from Page 39)

take at least a part of the production.

NEW HUNTON LIME POOL IN CENTRAL OKLAHOMA



The map shows the development and acreage holdings around the new well of the Pierce Petroleum Co. and C. J. Wrightsman and others in Section 30-7-4, Pottawatomie County, Oklahoma. It is one of the best Hunton lime wells found in the state, and, pinched in, is making 35 barrels an hour.

If this should be realized, the well will probably be drilled deeper and a better idea of the production of the Hunton in this region will be obtainable.

The well was drilled all the way down with rotary tools, and there is some question as to where the top of the Hunton was really encountered. The log of the Wrightsman well places the top of the formation at 3,757 feet, and the total depth at 3,788 feet. According to this information, the well has penetrated 31 feet into the Hunton, but there is a serious question about the top of the formation. In future operations it is likely that all wells will be drilled to a depth of 3,700 feet with rotaries and then cable tools used to complete the wells. The use of the cable tools will afford a much clearer idea of underground conditions in the area.

The first well to attract attention in this immediate sector was the well shown on the accompanying map in Section 19-7-4. This well was drilled by C. J. Wrightsman and Croxton & Bucklin, and had some production in the Hunton, but was drilled on down to the Wilcox with negligible results. The good showing in the Hunton in this well was what encouraged the drilling of the present producing well in Section 30.

OKLAHOMA

Partly due to the severe storm conditions experienced in the State and partly due to normal decline conditions which have been evidenced, the Seminole Field has decreased sharply within the past few days, and is now on the increase. On Monday of this week, the field produced 318,000 bbls., and on Tuesday, 320,000 bbls. The most appreciable drop was registered in the 9-6, or Seminole City Pool, which made 203,000 bbls. and which presents a sharp contrast to the peak of 264,000 bbls. which it made on Feburary 22. A drop of 61,000 bbls. in this area, is of itself significant, and part of the drop was caused by the storm which hempered the production of oil by air-gas lift system. The Bowlegs and Earlsboro sections of Greater Seminole continue to loom big, and another well was completed at Bowlegs when Indian Territory Illuminating Oil Co.'s No. 3 Waker, NW cor. SE SE, Section 15-8-6 started flowing 160 bbls. an hour from Wilcox sand 4,038-4,055 feet. In the Earlsboro region, the Amerada Petroleum Corp.'s No. 4 Anderson, SW cor. NW, Section 15-9-5 is making 55 bbls. an hour at only 2 feet in the Wilcox tapped 4,252-54 feet.

A wildcat well in Pontotoc County is showing oil. La Salle and others' No. 1 Fee, C N half, Section 31-5-5, which had Hunton lime 2,065-2,341 feet, Asylum shale 2,341-2,479 feet, and Viola lime 2,479-2,683 feet, and is standing with a hole full of oil after making two small flows. The interesting feature of this well is the thick Hunton formation which was found.

In Okfuskee County, C. L. McMahon, J. I. Cary and the Carter Oil Co. have a good Dutcher sand well in No. 1 Hall, NW cor. SE NE, Section 29-12-10. Sand was 3,143-3,145 feet, and the well is flowing 275 bbls. per day.

KANSAS

In Rice County, the Prairie Oil & Gas Co.'s No. 3 Walstein, SW cor. NW NE, Section 2-21-6w, is flowing 60 bbls. an hour from sand 3,401-32 feet. The oil is being shipped by tank cars.

WEST TEXAS AND PANHANDLE

FORT WORTH, Tex., Apr. 12.—In Winkler County, Independent Oil & Gas Co.'s No. 1 Hendrick had first show of gas at 2,797 feet, increased to 1,000,000 feet at 2,815 feet and began spraying oil with 4,000,000 feet of gas at 2,825 feet. The hole is open from 2,000 feet where 8-inch was set and the well is making 3 bailers of salt water per hour from 2,650-55 feet. The 6-inch will have to be set before the well can be deepened to the main pay.

In Crane County, Eastland Oil Co. and Collet's No. 8 University, a location east of No. 1, flowed 150 bbls. an hour at 2,895 feet, while Simms and Atlantic's offset flowed 330 bbls. Monday at 2,890 feet.

In Gray County, Texas Panhandle, Empire Gas & Fuel Co.'s No. 1 Webb, SW cor., Section 59, Block 25, 2 miles from Wheeler County line, had a showing of oil at 2,850-56 feet with surface elevation of 2,578 feet or 278 feet below sea level.

Texas Panhandle daily average pipe line receipts of crude were 124,130 bbls. during March, compared with 121,440 bbls. during February, an increase of 2,690 bbls. daily. Stocks increased 2,397,300 to 14,674,450 bbls. April 1. Total deliveries during March were 1,631,500 bbls., a decrease of 594,500 bbls. Total storage capacity April 1 was 22,406,000 bbls., an increase of 1,082,000 bbls., and empty room was 7,731,550 bbls. Gasoline production during March was 8,213,825 gallons, an increase of 4,237,825 gallons. Gasoline storage April 1 was 1,506,332 gallons, an increase of 328,905 gallons. Gasoline tank car shipments were 731, an increase of 49. Crude shipments were 9,269 cars, an increase of 540 over February. Total storage under construction was 165,000 bbls. Magnolia leads in crude stocks with 3,721,000 bbls., Gulf company being next with 2,814,721 bbls., and Phillips Petroleum third with 2,586,000 bbls.

Stebbins Oil Co.'s No. 1 Higgs wildcat in eastern Jones County has 600 feet of oil in hole and 100,000 feet of gas at 1,599-1,604 feet.

In Upton County Prairie's No. 1 Lane-C extended production about three-quarters of a mile southeast with a show of oil at 1,840 feet, where 6-inch is being run.

In Eastland County McLester Oil Co.'s No. 1 Thorp, SE cor. J. R. Stubblefield Survey, is flowing steadily 50 bbls. hourly at 3,800-01 feet.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Apr. 12.—Killam & Maddox's No. 1 Bruni, Webb County, Block No. 5, Survey No. 4, Bruni Subdivision of Mariana Arispe grant, and a half mile southeast of Bruni Station, on Texas Mexican Railroad, came in Sunday a gasser and is running wild with no casing in the hole. Total depth 1,400 feet. Gas coming probably from about 900 feet where it had 11-foot sand. The well is 1½ miles west of nearest production, in the Cole Field, and no well anywhere in all Mirando territory has ever heretofore developed so much gas at such shallow depth.

GULF COAST

HOUSTON, Tex., Apr. 12.—In the cap rock section on the dome in the Boling Pool, Weed & Gayle's No. 7 Bay is heading 600 bbls. at 430 feet, 18 gravity oil. Screen was set in 10 feet of cap rock. The firm has nine shallow wells on the dome, averaging 750 bbls. gross production now.

The Humble Oil & Refining Co.-Valley Oil Co.'s No. 2 Thompson, in the Raccoon Bend district in Austin County, is heading 35 bbls. of 18 gravity black oil, at 1,009 feet. The bit went into 23 feet of sand. It is the second well there, the first being the Valley Oil Co.'s No. 1 Walton which came in February 15, making a little oil and considerable gas. A series of shallow tests followed. Joint No. 3 Austin College lands was dry at 969 feet when put on an air compressor. It was drilled to 981 feet and preparations are being made to test a showing in a sand at that depth. No. 2 Thompson blew dry gas at the rate of 50,000,000 feet per day at 915 feet, but the gas was killed to drill it deeper.

MUNICIPAL GASOLINE TAX TESTED IN COURT

AUSTIN, Tex., Apr. 9.—The right of a municipality in Texas to levy a tax on gasoline will be tested in the Supreme Court of the state. The court has granted a writ of error in the case of the City of Lubbock vs. the Magnolia Petroleum Co., thus indicating that it would have a submission of the case and then render an opinion.

The trial of the case follows the refusal of the Magnolia Petroleum Co. to pay a one-half cent per gallon tax levied by the city of Lubbock through an ordinance. The Magnolia company secured favorable action in the lower courts.

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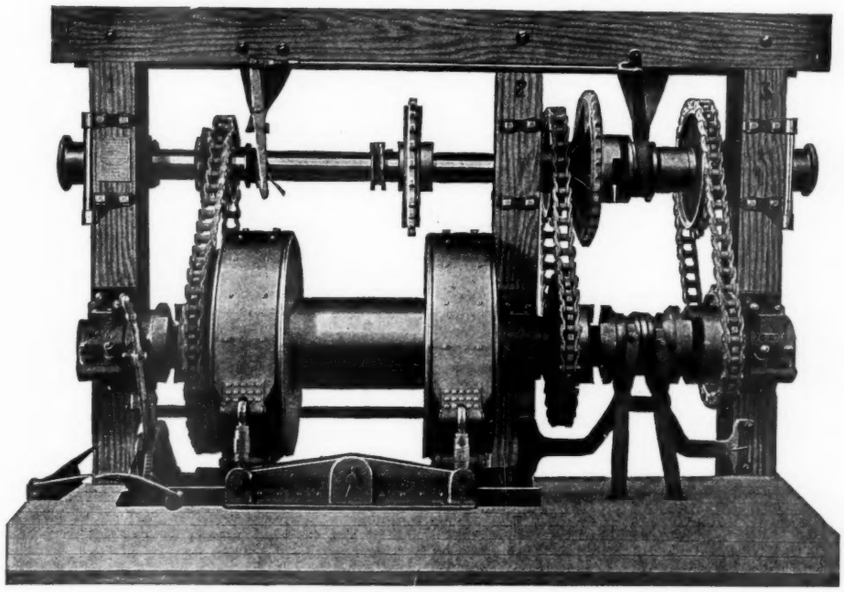

Front View Gumbo Buster 78A Draw Works

The Gumbo Buster 78A Draw Works is not a radical departure from the previous Gumbo Buster Draw Works design. But, it has been made larger and stronger in order to stand the severe drilling conditions encountered now, and for a good many years to come.

The Gumbo Buster 78A Draw Works has a 7″ line shaft, 8″ drum shaft, 20″ spool, 12½″ brake bands, 10x14 hardwood post, all-steel clutch blocks and sprockets, a front equalized floor type brake and other desirable features.

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Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

The Question and Answer Department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

SULPHUR IN SOLUTION IN GASOLINE

If such is known, kindly give us a quantitative method for determining uncombined sulphur in solution in gasoline. —J. F.

There is no reliable method for determining the quantity of free or uncombined sulphur in gasoline. The usual procedure is to determine the quantity of total sulphur and the different forms of sulphur in combination; then the difference as free sulphur.

The quantity of sulphur which the ordinary gasoline and kerosene will dissolve is small. The experimental evidence, as reported by several authorities, indicates that these products may dissolve from 0.15 to 0.45 per cent of sulphur. The quantity will vary with character of the product.

LIQUID LEVEL REGULATORS

On what units are liquid level regulators used in refineries and gasoline plants? Under what pressure, what material of construction to withstand chemical action of oils, etc.?—E. F. M.

These regulators are used under conditions where it is desired to regulate the level of the liquid in refineries and gasoline plants under many different conditions of pressure, temperature and corrosion. Some of these include volume of oil in the still, towers, supply and discharge tanks, condenser coils and condenser box levels, etc.

Regulators of this type may be obtained for almost any desired kind of service. When the conditions include oils containing large quantities of corrosive substances the apparatus may be obtained in special alloys which will resist corrosion to a greater degree than the stock metal.

TREATING KEROSENE IMPROVES BURNING QUALITIES AND COLOR

Are the same kind of substances removed when treating kerosene as when treating gasoline? Is the object the same for both?—C. G.

The substances removed will vary with the kind of crude which naturally has an influence on the characteristics of the compounds that may be present in the gasoline and kerosene. It is our information that it is not necessary to apply the complete treatment, that is including acid, to the gasoline which is obtained from the crude produced in your section (North Texas). When it is necessary to give the complete treating to both the gasoline and the kerosene fractions, about the same kind of substances are removed from both, only the quantity is larger from the kerosene.

The object in treating gasoline includes color, odor and the removal of objectional corrosive and gum forming compounds. While color and odor can have little to do with the actual fuel value, they are important from the marketing standpoint. Both of these must be considered in the treating of kerosene together with the additional factor, burning qualities. If the gums, tars and unsaturated bodies were left in the kerosene, it would burn with a smoky flame because many of these substances do not readily unite with oxygen in the air.

The corrosive substances, such as sulphides and sulphur, must be removed or reduced in the case of gasoline, because of the possible damage to parts of the motor. In addition to the corrosive action that these compounds may have on the metal parts of the lamp and burner, if permitted to remain in kerosene, there are other objections, including the formation of incrustations on the wick and the formation of gases and vapors which may cloud the chimney and tarnish silver.

LUBRICATING VALUE NOT INDICATED BY GRAVITY

We have two kinds of lubricating oil of the same gravity, (26.8), but the viscosities are 50 seconds apart, (160 and 210), when tested with a Saybolt Universal instrument and wish to ask if gravity and viscosity do not usually check each other as indicating lubricating value? That is, should not the higher viscosity oil have a lower gravity unless it has been diluted?—J. R. H.

There is no very close relation between gravity and viscosity, certainly not so close that it is possible by means of the A. P. I. gravity to classify oils which differ only 50 points in viscosity at 100 degrees Fahrenheit. Two stocks made in the same refinery will frequently differ that much in viscosity although the other physical properties may be identical.

Aside from serving as a means for the calculation of weight and as an indication of the source of the lubricating oil, gravity is of very little value when determining lubricating value. Very wide fluctuations in the gravity of a brand would tend to indicate that the refiner was not giving proper attention to the quality of oils used in making the product.

It may be said that in a general way the paraffin base oils have the highest gravity, while the lowest gravity lubricating oils are obtained from the asphalt and naphthenic base crudes.

DEPOSITS IN STILL CAUSE HOT SPOTS

We have had a bad hot spot on two stills out of a battery of five and upon opening these stills we found a deposit in each still at the spot weighing about 5 pounds in one and somewhat more in the other. This material had a salty taste. We add nothing to our crude so cannot explain the formation of this material. Our crude is clean and runs less than a per cent sediment. Can you suggest the cause and possibly a remedy?—R. F. A.

Under the conditions as you have explained them, there are two possible direct causes. Hot spots, which are caused by the formation of deposits, usually result from material in the crude and from corrosion, sometimes from a combination of both. A small quantity of common salt would give the salty taste but the bulk of the material may be something else.

We have observed a case where the hot spot was formed very soon after the crude was pumped in from a tank which had been standing for several weeks. The analysis of the deposit was

	Per cent
Total water soluble salts	85
Common salt	80
Combustible matter	19
Iron	trace

The analysis plainly indicates that although the crude was supposed to be clean, the deposit, consisting of so much salt, must have come from the crude. The investigation of the tank showed that the swing line had been lowered into the sediment area and in this manner enough salt was picked up to cause the trouble.

Another example suggests a combination of solids, salts, in the crude and corrosion of the equipment. The deposit from the still had the following composition:

	Per cent
Carbon	43
Sulphur	19
Salt	18
Iron	16
Undetermined	4

The only remedy in this matter is to keep the solid-forming substances out of the stills by settling or otherwise treating the oil charge. Corrosive substances should be removed or neutralized in settling tanks or towers before reaching the still where they may be concentrated. Acid corrosion may be prevented by the use of ammonia in the still, but this treatment does not stop the deposition of solid material.

BABBITT METAL FOR BEARINGS AND SETTING CABLE

Will you be kind enough to give me the composition of babbitt metal? Is the same kind of babbitt used for bearings that is used for setting cable in a rope socket?—A. W. K.

Babbitt metal is an alloy, containing copper, antimony, and tin, known as an antifriction metal which is extensively used for bearings, and to some extent for setting the cable in the rope socket of the bit used for drilling. The alloy is valued because it is tough and lacks brittleness. As a bearing metal it seems to function due to the presence of a mass of soft tin through which are scattered hard crystals made up of copper and antimony, also other hard crystals composed of tin and antimony. These hard crystals support the load while the soft material adjusts itself to the wearing surface and equalizes the bearing pressure.

The composition of babbitt metal varies to a considerable extent, but is usually within the following—Copper 3 to 10 per cent, antimony 8 to 12 per cent, and tin 80 to 90 per cent, with traces of lead. Brittleness is controlled by the quantity of antimony, which should always exceed the quantity of copper.

The composition of the babbitt metal used for bearings and the setting of cable is essentially the same. It is especially important in cable work that the alloy shall be free from brittleness.

SPECIFCATIONS FOR RUST-PREVENTING COMPOUND

We wish to obtain some information about the kind of tests which should be used in connection with the examination of paste which is recommended for preventing rust and shall appreciate what information you may give us?—C. R. X.

Chromium salts are commonly incorporated with grease mixture, consisting largely of petrolatum, for the prevention of the formation of rust. There are oily liquids used for the same purpose.

The specifications of the United States Army Air Service will probably give you the information you desire. These specifications are as follows:

This specification covers the requirements of the Air Service for a rust-preventing compound for the protection against corrosion of airplane engines in reserve.

The base of this material shall be of highly refined petroleum product and compounded with such chemicals that are known to be rust-inhibitors.

It shall not contain fillers such as rosin, limestone, graphite or degras upon which deterioration and in the presence of atmospheric or microscopic moisture would give up free vegetable or mineral acids.

The product when completed shall not contain even a trace of free mineral, fatty or other acids.

It shall not harden or gum.

It shall remain in a form that can be readily removed from the surfaces by merely wiping with a cloth or swab; should not necessitate the use of a solvent only in places where it is impossible to reach with a clean cloth or swab.

Polished steel plates dipped in a 30 per cent salt solution and then coated with this product without drying or removing the salt water shall not rust in 96 hours.

The chemicals contained in such a compound shall possess the ability of overcoming a corrosive action of oxygen present in moisture, sulphur in its different forms, or carbondioxide instantly.

This material will be of two consistencies as follows:

(a). A sufficiently high melting point (approximately 130 degrees Fahrenheit) not to flow from or sheet off metal surfaces to which it has been applied and which will not sheet off or come away from metal surfaces to which it was applied when the temperature of the metal was at or near the temperature of the melting product.

(b). A fluid consistency viscosity by the Saybolt Universal Viscosimeter method of 60. This consistency shall not congeal above 15 degrees Fahrenheit and must contain the rust-preventing chemicals in such a manner as to prohibit any precipitation or segregation.

CARBON REMOVERS

I have a liquid which dissolves the carbon from cylinders etc. What kind of liquids are used for this purpose and have they any corrosive action?—R.B.W.

There is no liquid which will, under ordinary conditions of temperature and pressure dissolve carbon. Liquids which are used for cleaning cylinders act to some extent upon the carbon deposit because tars and gums which tend to hold the deposit together are soluble in them. When these substances are removed the pure carbon remains as a powder and falls away from the metal surface or is deposited in the liquid.

Some of the preparations which are on the market for the purpose you have indicated are cheap petroleum distillates containing added coloring matter and frequently something to impart a distinctive odor. Kerosene, naphtha and gas oil may be used for washing out cylinders.

The preparations which we have seen do not appear to contain any corrosive substance.

We are informed that these carbon deposits are often so hard, due to the coking action of the heat, that solvents have little action toward their removal. Mechanical means are generally employed and are considered more satisfactory because a much better surface remains than when solvents are used.

This cracking still, 8 feet inside diameter, 3½ inch sidewalls, 65 feet long, weighing 268,600 pounds, operates at 450 pounds pressure at a temperature of 900 degrees.

Helping To Revolutionize The Use Of Cracking Stills

Just as cracking revolutionized the refining of crude oil, Smithsteel Cracking Stills have revolutionized cracking. They have swept away the old limitations on the size of units.

The A. O. Smith Corporation has built the world's largest cracking still. The walls are 3½ inches thick, the inside diameter 8 feet, the length 65 feet, and the weight 268,600 lbs.

This cracking still, however, does not indicate the largest size to which Smithsteel Cracking Stills can be made. Smithsteel Cracking Stills can be built to any desired size, within transportation limits.

The A. O. Smith Corporation will gladly place complete information before you.

A. O. SMITH CORPORATION · *Milwaukee, Wisconsin*

Refining of Spindletop Crude Oil

Substantial Gasoline Yield of High Antiknock Value Obtained From Low Gravity Product. Operation Explained

By Gustav Egloff and Jacque C. Morrell*
Universal Oil Products Research Laboratories, Chicago.

Up to the first of January, 1927, over 60,000,000 bbls. of oil have been produced in Spindletop of which 15,037,431 bbls. were produced last year, the deep sand on southwest side being opened November 10, 1925, and, assuming that the present daily rate of production continues, the field will produce over 32,000,000 bbls. of crude for the year 1927 alone.

Spindletop crude oil has heretofore been used mainly for fuel purposes. However, it is too valuable an oil to be used for fuel, because under cracking conditions it produces a remarkable cracked gasoline having a benzol equivalent of 45 per cent. This gives it the properties of operating a high compression motor without the use of blending agents. Not a single barrel of this high grade cracking stock should be used for inferior uses, such as fuel, but all of it should be cracked into high grade antiknock gasoline.

Cracking Tests

A series of cracking tests were made upon Spindletop crude oils derived from two deep sands opened up within the past year. Sample "A" represents a heavy Spindletop crude and sample "B" a light crude oil.

The Spindletop oils as received were simultaneously topped and cracked, each under two conditions of operation, one designated as the nonresiduum basis, producing cracked distillate and coke, and the other, the residuum oil basis of producing cracked distillate, residuum oil and coke. The following distillation analyses show the composition of the two types of Spindletop crude oil used as cracking stock. The distillation was conducted at atmospheric pressure up to the end of the kerosene cut, and at reduced pressure for the gas oil, lubricating oil and pitch fractions:

	Spindletop Crude			
	Oil Sample "A"		Oil Sample "B"	
A. P. I. gravity	22.4		28.7	
Viscosity furol at 77°F.	23 Sec.		13.5	
Cold test—below minus	30°F.		Below Minus 30°F.	
	Pct.Over	A.P.I. Gr.	Pct.Over	A.P.I. Gr.
Fraction below 410°F.	5.0	39.0	20.0	48.0
Fraction boiling between 410-572°F.	40.8	28.6	34.4	28.8
Gas oil	4.2	21.7	2.5	22.9
Lubricating oil	45.0	19.0	37.5	19.9
Pitch bottoms	4.8		5.6	
Water	0.2		None	
Sulphur	0.46		0.26	
U. S. Bureau of Mines 100 cc distillation coke per cent by weight	1.8		0.9	
Wax	Practically nil		Nil	

Salt Water in the Crude Oil

The 22.4 A. P. I. gravity Spindletop crude oil contained 0.2 per cent of water. There were present in the water, magnesium, calcium and sodium chlorides. Hydrolysis of chlorides of the alkaline earth metals at elevated temperature will form hydrogen chloride. The hydrogen chloride dissolves in the condensed water and causes corrosion in the condenser of pressure still equipment. To overcome the corrosive effect of hydrochloride acid which manifests itself particularly in the cooler portions of the system, such as the condenser coil, a small amount of ammonia may be injected to neutralize the acid.

Sulphur Present in Crude Oil

The Spindletop crude oils have relatively low percentages of sulphur compounds. The light and heavy crude oils subjected to cracking conditions contained 0.26 and 0.46 per cent of sulphur respectively. Under cracking conditions some types of sulphur compounds present in the Spindletop crude oils will decompose partly in hydrogen sulphide. Hydrogen sulphide is among sulphur compounds the primary corroding agent of cracking still equipment. The corrosive effects of hydrogen sulphide could be neutralized in part by the injection of caustic soda solution into the system. Another method of resisting corrosion is by the use of corrosive resisting alloys such as chrome iron, electroplating with corrosive resisting metals such as chromium, and the use of removable metallic liners.

*Paper delivered before meeting American Chemical Society, Richmond, Va., April 11-14.

Cracking Results

The cracking of the low gravity Spindletop crude oil which contained no gasoline, was carried out as a nonresiduum type operation at a temperature of 840 degrees Fahrenheit and a pressure of 150 pounds, producing cracked distillate, coke and incondensible gas. The yield of Navy endpoint gasoline in this test with one pass of the crude oil through the system was 58.1 per cent.

When cracking the 22.4 A. P. I. gravity Spindletop crude oil to produce cracked distillate, residuum oil, coke and incondensible gas, the yield of Navy endpoint gasoline was 46.1 per cent. The average operating temperature for the residuum oil type of cracking operation was 810 degrees Fahrenheit, and the pressure 150 pounds. The operating temperatures and pressures with high capacities would be generally higher than those shown.

The analyses of the cracked gasolines derived from the two types of operation are as follows:

Distillation Analyses

	Type Operation	
	Nonresidu'm	Residuum
A. P. I. gravity	46.4	47.9
Initial boiling point	118°F.	111°F.
Pct. Over	Temp.°F.	Temp.°F.
10	180	173
20	219	208
30	251	243
40	280	276
50	306	300
60	329	322
70	350	346
80	372	368
90	396	396
Endpoint	436	434
Loss, per cent	1	0.5
Sulphur	0.07	0.08
Color	30 plus	30 plus
Odor	Very good	Very good
Doctor	Negative	Negative
Corrosion	Negative	Negative

Chemical Analyses

Unsaturated hydrocarbons	17.8
Aromatic hydrocarbons	21.2
Naphthene hydrocarbons	28.5
Paraffin hydrocarbons	32.5

Cracked Distillates

The cracked distillates produced from the pressure distillation of the low gravity Spindletop crude oil by the two methods of operation were analyzed by the Hempel method of distillation:

	Type Operation	
	Nonresidu'm	Residuum
Color	Yellow	Yellow
A. P. I. gravity	40.2	48.4
Initial Boiling point	87°F.	84°F.
Pct. Over	Temp.°F.	Temp.°F.
10	169	154
20	229	201
30	274	255
40	315	288
50	359	321
60	387	366
70	427	387
72.2	435	
81.8		445
Pressure distillate bottoms or gas oil	24.3%	13.0%

Refining of Cracked Distillates

The cracked distillates produced from the pressure distillation of the Spindletop crude oil offers no special difficulty in refining to marketable gasoline meeting all specifications. The above cracked distillates were agitated with six pounds of 66 degrees Baume sulphuric acid, allowed to settle, and the acid sludge drawn off. The acid treated cracked distillate was then thoroughly agitated with water, allowed to settle and the water drawn off. The acid and water-washed cracked distillate was then treated with 1 per cent by volume of 14-degree Baume sodium plumbite and, after settling, the plumbite solution was drawn off. This treated cracked distillate was then water-washed and fire and steam distilled at a temperature of 300 degrees Fahrenheit (approximately) to finished gasoline of the above-tabulated qualities.

Pressure Distillate or Gas Oil

The gas oil derived from the treatment of the cracked distillate makes an excellent furnace of Diesel engine oil, or may be cracked into further yields of gasoline. The analyses of the gas oil bottoms follow:

	Type Operation	
	Nonresidu'm	Residuum
A. P. I. gravity	19.2	24.3
Initial boiling point	435°F.	445°F.
Pct. Over	Temp.°F.	Temp.°F.
10	460	457
20	470	468
30	478	475
40	485	482
50	493	490
60	502	495
70	515	510
80	535	530
90	565	561
Endpoint	698	644

Residuum Oil

The residuum oil produced from cracking the heavy Spindletop crude analyzed as follows:

Gravity, specific	.9979
Gravity, deg. A. P. I.	10.3
I. B. P., deg. F.	405 °F.
Endpoint, deg. F.	715 °F.
Charge, cc.	100 cc
*Flash	200 °F.
*Fire	220 °F.
Furol viscosity 77°F.	21 Sec.
Benzol, b.s. pct.	2.4
Condenser, deg. F.	Water
Cold test	Below 0°F.

*Cleveland open cup.

Pct. Over	Temp.°F.
5	438
10	452
15	461
20	475
25	481
30	493
35	504
40	516
45	525
50	540
55	559
60	579
65	605
70	640
75	674
80	764
87	716

56 per cent at 572 degrees Fahrenheit.
87 per cent over.
15.8 per cent coke by weight.

Coke and Gas Formation

The production of coke and incondensible gas under the aforementioned cracking conditions for the heavy Spindletop crude by the two types of operation are tabulated below:

Type operation—	
Nonresiduum:	
Coke, lbs. per bbl	27
Gas, cubic feet per bbl.	608
Residuum:	
Coke, lbs. per bbl.	8
Gas, cubic feet per bbl.	334

Antiknock Properties of the Cracked Gasoline in Terms of Benzol Equivalent

The cracked gasoline produced from Spindletop crude oil has high antiknock properties. The cracked gasoline by motor test is equivalent to a blend of 45 to 50 per cent benzol added to straightrun Pennsylvania gasoline.

Cracking High Gravity Spindletop Crude

The light Spindletop crude oil contained 20 per cent of 48.0 A. P. I. gravity naphtha having an initial boiling point of 161 degrees Fahrenheit and endpoint of 468 degrees Fahrenheit. To market this naphtha as gasoline it would have to be blended with natural gas gasoline. This is not necessary when cracking the crude oil as obtained from the well, because the cracking reaction produces sufficient light ends to form a natural blending agent producing a finished gasoline meeting Navy gasoline specifications.

The cracking of high gravity Spindletop crude oil, 28.7 A. P. I., was carried out at an average temperature condition of 850 degrees Fahrenheit and 150 pounds pressure when using the nonresiduum method of operating, that is to form only cracked distillate, coke and incondensible gas. The Navy endpoint gasoline yield, with one treatment of the crude oil, was 65.2 per cent by this procedure.

When cracking the same crude oil on a residuum oil basis of operation, i.e., producing cracked distillate, residuum oil, coke and incondensable gas, the yield of Navy endpoint gasoline was 52.9 per cent. The average operating conditions in this case were 810 degrees Fahrenheit and a pressure of 150 pounds.

The analyses of the cracked gasolines derived from the two methods of operation are as follows:

Distillation Analyses

	Type Operation	
	Nonresidu'm	Residuum
A. P. I. gravity	48.6	52.0
Initial boiling point	126°F.	122°F.
Pct. Over	Temp.°F.	Temp.°F.
10	178	177
20	200	207
30	240	227
40	263	250
50	290	273
60	315	297
70	340	320
80	364	347
90	396	383
Endpoint	438	434
Sulphur, per cent	0.05	0.05
Color	30 plus	30 plus
Odor	Good	Good
Doctor	Negative	Negative
Corrosion	Negative	Negative

Chemical Analysis

	Pct.
Unsaturated hydrocarbons	14.7
Aromatic hydrocarbons	17.3
Naphthene hydrocarbons	32.6
Paraffin hydrocarbons	35.4

Cracked Distillates

The cracked distillates produced from the pressure distillation of the 28.7 A. P. I. gravity Spindletop crude oil by the two methods of operation were fractionated by the use of a Hempel column.

	Type Operation	
	Nonresidu'm	Residuum
Color	Yellow	Yellow
A. P. I. gravity	43.6	49.8
Initial boiling point	86°F.	83°F.
Pct. Over	Temp.°F.	Temp.°F.
10	167	169
20	206	197
30	252	234
40	291	266
50	335	297
60	372	330
70	407	380
76.2	435	
80		420
83.1		435
Gas oil bottoms	18.5%	11.9%

Cracked distillates produced from the light Spindletop crude pressure distillation are quite simple to treat to marketable gasoline, passing all specifications as to color, odor, sulphur content, doctor sweet and negative corrosion. The method of refining is the same as previously described for the cracked distillate produced from converting heavy Spindletop crude into gasoline.

Gas Oil Bottoms

The gas oil bottoms derived from the treatment of the cracked distillate analyzed as follows by 100 cc. distillation in an Engler flask:

	Type Operation	
	Nonresidu'm	Residuum
A. P. I. gravity	18.8	24.7
Initial boiling point	448°F.	450°F.
Pct. Over	Temp.°F.	Temp.°F.
10	461	470
20	470	487
30	475	490
40	483	495
50	493	503
60	498	513
70	510	528
80	525	555
90	557	592
Endpoint	707	707

Residuum Oil Produced From Cracking

The residuum oil produced from crack-

ing the light Spindletop crude analyzed as follows:

Gravity, specific	.9786
Gravity, deg. F., A. P. I.	13.1
I. B. P., deg. F.	400 °F.
Endpoint, deg. F.	760 °F.
Charge, cc.	100 cc
*Flash	180 °F.
*Fire	210 °F.
Furol viscosity 77°F.	18 Sec.
Benzol, b.s.%	0.6
Condenser, deg. F.	Water
Cold test	Below 0 °F.

*Cleveland open cup.

Pct. Over	Temp. °F.
5	420
10	435
15	448
20	455
25	468
30	480
35	490
40	495
45	512
50	525
55	540
60	550
65	572
70	610
75	655
80	680
85	728
90	760
95	

65 per cent over at 572 deg. Fahrenheit.
90 per cent over.
9.7 per cent coke by weight.

Type operation—
Nonresiduum:
Coke, lbs. per bbl. 27
Gas, cubic feet per bbl. 438
Residuum:
Coke, lbs. per bbl. 4
Gas, cubic feet per bbl. 264

Summary of Cracking Tests

The following tabulation summarizes the results obtained from the cracking of the heavy and light Spindletop crude oil on a nonresiduum and residuum basis:

Kind of Oil—	Spindletop Crude Oil Sample "A"		Spindletop Crude Oil Sample "B"	
A. P. I. gravity	22.4	22.4	28.7	28.7
Pressure, lbs.	150	150	150	150
Pressure dist.—				
Per cent crude oil	80.4	56.3	85.6	63.7
A. P. I. gr.	40.2	48.4	43.6	49.8
Residuum—				
Per cent crude oil	None	35.7	None	27.6
A. P. I. gr.	....	10.3	....	13.1
Coke, lbs./bbl.	27	8	27	4
Unc. gas cu. ft./bbl.	608	334	438	264
Coke, gas and loss	19.6	8.0	14.4	8.7
Gasoline (N. E. P.)—				
Per cent press. dist.	72.2	81.8	76.2	83.1
Per cent crude oil	58.1	46.1	65.2	52.9
A. P. I. gr.	46.4	47.9	48.6	52.0
IBP-EP	118–436	111–434	126–438	122–434
Gas oil—				
Per cent press. dist.	24.3	13.0	18.5	11.9
Per cent crude oil	19.5	7.3	15.9	7.6
A. P. I. gr.	19.2	24.3	19.8	24.7
Loss—				
Per cent dist.	3.5	5.2	5.3	5.0
Per cent crude oil	2.8	2.9	4.5	3.2

Summary

1. Two types of Spindletop crude oil were investigated for their yields of commercial product.

2. A light Spindletop crude oil was cracked, producing 65 per cent of gasoline in one cycle of operation.

3. A heavy Spindletop crude oil was cracked, producing 58 per cent of gasoline in a single cycle of operation.

4. The crude oils are of low sulphur content. The cracked distillates are readily and economically refined to finished gasolines meeting all specifications.

5. The gasolines obtained by cracking the light and heavy Spindletop crude oils are equivalent to a blend of 45 to 50 per cent benzol added to straightrun Pennsylvania gasoline. They are high antiknock quality gasolines.

TEXAS GASOLINE TAX

SAN ANTONIO, Tex., Apr. 9.—Texas' new 3-cent gasoline tax became effective and began operating March 17. Under the 1-cent gasoline tax the state collected $313,334 on January sales (31 days) and in February $283,776 (28 days) according to reports from the office of the comptroller at Austin. For Feburary, taxes paid by some of the collections reported were from five companies:

Gulf	$83,066.64
Magnolia	80,832.49
Texas	69,675.94
Pierce	27,274.42
Humble	22,927.52
	$283,777.01

Collections during a month do not run regular with the sales for the month and the figures showing collections do not therefore measure the sales. However, they give some idea of the volume of business and the total amount the oil industry will pay into the state treasury of Texas. The old production tax remains and the gasoline tax raised from one cent a gallon to three cents a gallon, based on the January receipts will pay close to $1,000,000 a month into the treasury of the state.

ADMIRAL SIMS' VIEWS ON OIL AND SEA POWER

The day of the battleship has definitely ended and in another war sea fighting will be done entirely by submarine and airplane, in the opinion of Rear Admiral William S. Sims, retired, as expressed to Judson C. Welliver, Director of Public Relations of the American Petroleum Institute.

"In another war the best thing to do with our battleships would be to send them as far as possible up the Mississippi River, out of harm's way, and send out submarines and aircraft to do our fighting," said Admiral Sims.

"The battleship was once the backbone of the fleet; it is no longer. The submarine and airplane have put an end to its reign; they have clipped the wings of sea power. Not merely have new instruments been devised, but the whole strategy of the seas has been changed. The naval blockade, by which the superior power closed the ports of the inferior and cut it off from communication, is of the past. Even a minor power, quite unable to cope in battleships and cruisers, could confront the blockading fleet with such a force of submarines and air craft as would make the maintenance of a blockade utterly impossible."

Talking of oil resources, Admiral Sims said:

"The naval strategy of another war will be greatly concerned with assuring ample and continuous supplies of petroleum and its products because it is essential as fuel not only for surface craft, but even more so for submarines and aircraft. England, having no significant oil supplies at home, must keep open the routes to the Near East, the Middle East, the Straits Settlement, because from these she must get her oil. The United States would be concerned about communications with Mexico and the Caribbean countries and to keep the Panama Canal open for movement of oil between the east and west coast. But the problem is not so urgent with us, because of our huge supplies of oil within our own borders. With the disadvantage of having two ocean fronts to protect, the United States is compensated by the possession of vast oil resources on either front. Over 70 per cent of the world's petroleum production is in the United States, and the industry has seen its greatest expansion in the years since oil began to be used as maritime fuel.

"All navies are now on the oil-burning basis, but no other naval power possesses its own oil as does the United States."

NEW CARGO MOTORSHIP

Experiments for the purpose of developing a new type of cargo motorship with an average sea speed of about 15 knots, are reported being carried on in the model basin of the Washington Navy Yard, under the direction of Shipping Board Commissioner W. S. Benson and Rear Admiral Taylor.

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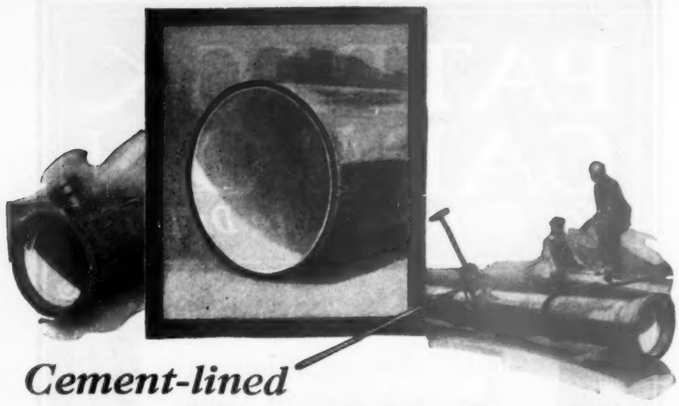

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The lining adheres to the iron so tenaciously that the pipe can be cut or tapped without breaking the coating adjacent to the cut.

Moreover, deLavaud centrifugal pipe, with its larger internal diameter, cement-lined by this method, has initially as great carrying capacity as ordinary pipe, nor is the flow reduced with age.

If you have any problem that involves the necessity of an absolutely non-corrosive pipe under all conditions, write to us for special literature covering the specifications, manufacture and uses of deLavaud centrifugal cement-lined cast iron pipe.

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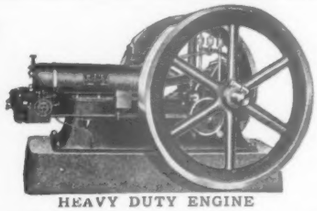
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SOURCES AND DISTRIBUTION OF MAJOR PETROLEUM PRODUCTS—ATLANTIC COAST STATES—1925

(Continued from Page 64)

Distribution by Uses—	Maine	N. Ham.	Ver.	Mass.	Rhode Is.	Conn.
Sugar refineries	.....	.....	.....	46,540	.....	.....
Logging and lumbering	49	5,749	.....	.....	.....	.....
Cement and lime plants	.....	.....	9,061	104,821	.....	555
Brick and clay plants	.....	3,168	3,441	40,566	.....	80,951
Food industries	21,386	1,005	2,527	163,446	36,004	16,284
Other manufacturing	1,509,745	40,081	9,974	4,771,024	3,040,858	1,162,402
Heating of buildings	54,466	53,609	2,279	935,993	184,505	80,343
U. S. Navy, coast guards and Army transports	77,374	.....	.....	190,609	148,130	66,161
Used as fuel by oil companies	634	.....	.....	1,313,900	515,121	3,537
Nonsegregated uses	612	1,512	.....	7,951	557	1,922
Exports	405	.....	.....	152,353	.....	.....
Totals	1,875,994	138,430	75,980	11,139,506	4,611,769	2,305,365

Note: Major companies under "other manufacturing" include deliveries to the following industries: Textiles, paper, shoe and leather, bleacheries, explosives, building materials, rubber and chemicals.

Distribution of Gas Oil and Fuel Oil, Middle Atlantic States, 1925

(Barrels of 42 gallons)

Distribution by Uses—	New York	New Jer.	Penna.	Delaware	Maryl'd	D. of C.
Railroads	823,520	87,788	222,383	3,951	29,979	190
Steamships (inc. tankers)	7,283,366	16,786,300	2,978,146	24	2,126,950	.....
Gas and elec. power plants	3,917,391	3,835,271	1,748,123	72,599	391,072	536,523
Smelters and mines	40,425	378,585	7,586	.....	300,000	.....
Shipbuilding, steel mills and foundries	221,025	1,815,312	2,914,821	67,194	373,944	.....
Automotive industries	73,803	116,031	5,489	.....	.....	.....
Sugar refineries	47,600	700,000	.....	.....	72,500	.....
Logging and lumbering	530	.....	12	.....	.....	.....
Cement and lime plants	185,174	72,000	53,796	.....	.....	2,678
Brick and clay plants	189,959	110,275	37,443	237	.....	3,750
Food industries	66,653	170,506	28,748	3,641	45,299	.....
Other manufacturing	1,010,685	3,139,714	1,537,919	1,288,367	636,713	11,607
Heating of buildings	457,865	306,195	1,071,099	697	116,497	87,750
U. S. Navy, coast guard and Army transports	718,132	15,012	224,294	12	33,869	91,138
Used as fuel by oil companies	340,948	8,090,977	2,226,598	55,360	1,018,999	.....
Nonsegregated uses	104,363	172,828	133,265	9,876	9,625	.....
Exports	509,347	.....	755,352	.....	409,389	.....
Totals	15,990,786	35,796,794	13,945,074	1,501,958	5,564,836	733,636

Note: Major companies under "other manufacturing" include deliveries to the following industries: Textiles, paper, shoe and leather, bleacheries, explosives, building materials, rubber and chemicals.

Distribuion of Gas Oil and Fuel Oil, South Atlantic States, 1925

(Barrels of 42 gallons)

Distribution by Uses—	Virginia	N. Car.	S. Car.	Georgia	Florida	Ttls. for At. Coast
Railroads	22,595	1,806	.....	160,732	2,529,230	4,165,693
Steamships (inc. tankers)	295,043	.....	358,159	76,828	1,304,525	32,479,711
Gas and electric power plants	45,282	10,921	30,686	423,455	1,106,653	15,015,420
Smelters and mines	14,616	.....	.....	.....	847,615	1,593,938
Shipbuilding, steel mills, foundries	58,871	.....	.....	250	.....	6,238,552
Automotive industries	.....	.....	.....	2,412	.....	239,590
Sugar refineries	.....	.....	.....	244,643	.....	1,111,283
Logging and lumbering	.....	.....	.....	625	44,452	51,417
Cement and lime plants	5,940	.....	.....	.....	6,550	440,575
Brick and clay plants	9,220	197	1,665	48,013	95,033	623,918
Food industries	8,162	1,250	3,434	110,177	343,374	1,021,896
Other manufacturing	152,053	43,361	5,920	59,764	1,294,045	19,714,232
Heating of buildings	35,900	.....	5,728	10,587	31,362	3,434,875
U. S. Navy, coast guard and army transports	33,971	.....	75,216	57,807	1,077	1,732,802
Used as fuel by oil companies	51,373	.....	618,146	295,148	3,605	14,534,846
Nonsegregated uses	104	3,288	1,069	47,801	223,909	718,682
Exports	.....	.....	808,787	44,190	10,622	2,690,445
Totals	733,130	60,823	1,908,810	1,582,432	7,842,052	105,807,375

Note: Major companies under "other manufacturing" include deliveries to the following industries: Textiles, paper, shoe and leather, bleacheries, explosives, building materials, rubber and chemicals.

Information is available through the United States Geological Survey relative to the consumption of fuel oil in the generation of electric power and the American Gas Association co-operated by preparing a special tabulation showing the consumption of oil for the enrichment of artificial gas in the Atlantic Coast states from 1923 to 1925.

Fuel Oil Consumption by Electric Power Plants, Atlantic Coast

(Figures in barrels of 42 gallons each)

State—	1923	1924	1925
Maine	167,982	92,567	112,416
New Hamp.	181	650	1,723
Vermont	59,796	42,147	42,853
Massachusetts	633,544	422,916	450,869
Rhode Island	1,549,566	1,084,119	321,349
Connecticut	15,615	8,619	2,297
New York	291,842	272,272	287,536
New Jersey	6,490	7,904	8,649
Pennsylvania	6,019	5,454	7,055
Maryland	1,099	1,202	1,711
Virginia	2,047	4,561	7,260
N. Carolina	4,367	2,290	1,646
S. Carolina	777	2,623	4,250
Georgia	277,015	254,403	309,063
Florida	906,837	1,025,476	1,400,534
Total	3,923,167	3,227,203	2,959,211

Oil Consumed in Gas Making, Atlantic Coast States

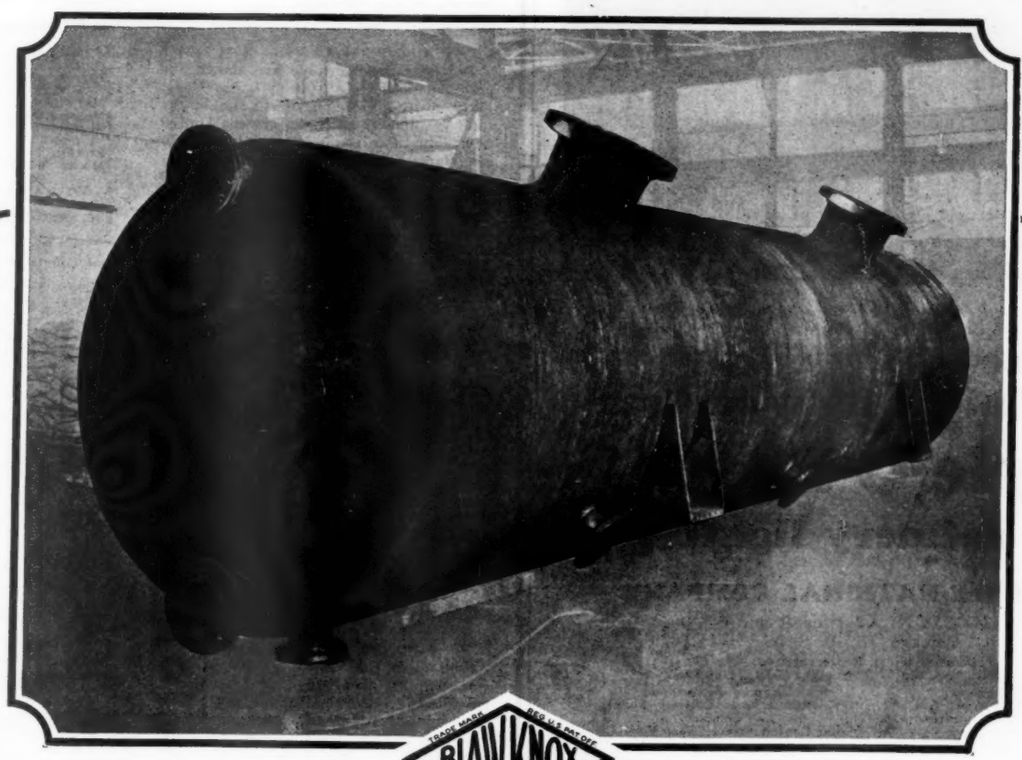
Maine	32,075	34,385	34,243
New Hamp.	66,690	30,232	34,264
Vermont	19,718	20,828	22,134
Massachusetts	1,049,572	1,183,510	1,202,941
Rhode Island	120,922	126,264	100,369
Connecticut	442,942	442,310	458,122
New York	6,235,481	6,127,584	5,723,736
New Jersey	958,230	970,876	1,035,977
Pennsylvania	1,269,048	1,734,160	1,702,424
Delaware	79,075	73,363	67,559
Maryland	314,057	372,130	331,771
Dist. of Col.	466,495	606,514	510,481
Virginia	228,497	236,214	238,935
N. Carolina	56,229	49,375	49,698
S. Carolina	41,134	42,813	37,298
Georgia	133,603	149,168	148,291
Florida	79,457	109,585	146,590
Total	11,593,135	12,209,711	11,844,833

Exports of Petroleum Products From the Atlantic Coast, 1925

Foreign shipments of gasoline and kerosene from Atlantic Coast ports during 1925 were made largely to those countries in which local conditions of transportation necessitate the handling of these products in containers, with the result that 57 per cent of the gasoline and 72 per cent of the kerosene exported from the United States in containers were shipped from Atlantic Coast ports. Of the shipment of these commodities in bulk, on the other hand, the Atlantic Coast exports were only 18 per cent of the national total of gasoline shipments in bulk and 29 per cent of the national total kerosene bulk shipments. Combining the bulk and case shipments, Atlantic Coast ports exported 21.6 per cent of the gasoline shipped from the United States in 1925 and 41 per cent of the kerosene. As the refineries operating in the Atlantic Coast states produced only 56 per cent of the total oil burned as fuel in this territory during 1925, no large quantity of such oil was available for foreign shipments and the exports from Atlantic Coast ports during the year formed only 8.3 per cent of the national exports of gas oil and fuel oil.

Approximately one-fifth of the gasoline exported in containers and bulk from the United States during 1925 was shipped from Atlantic Coast ports, being 7,623,955 bbls. out of a national total of 30,637,804 bbls. Shipments in containers totaled 3,066,661 bbls., or 57 per cent of the 5,369,381 bbls. shipped from the United States, while shipments from New York alone formed 52 per cent of the total gasoline exported in containers. Bulk shipments of gasoline from Atlantic Coast ports were 4,557,294 bbls. Of the Atlantic Coast shipments, 5,835,217 bbls. were exported from New York and 1,669,773 bbls. from Philadelphia. Exports from the other ports were negligible. Gasoline was shipped to 81 countries.

The destinations of these shipments have been grouped, in the following table,



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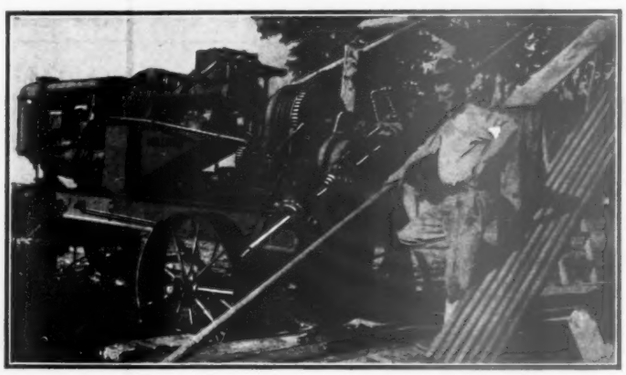

Angular Structure Drilling With Sullivan Diamond Drills

When you need to drill holes at an angle to secure accurate structure drilling results, the only practical method is a Sullivan Diamond Drill.

Suppose you want to intercept fractures through which oil may be seeping up from lower formation. Suppose the formation pitches, or dips, so that vertical drilling will break up the strata as it passes from one to the next?

With the Diamond Drill it is easy, since this machine is designed to drill and take core at any angle of the 360 degrees.

Can you do this with any other machine?

The photograph shows a Sullivan "CN" 1000 ft. mounted, Buda engine powered, hydraulic feed, Diamond Drill boring a hole at 30 degrees from the horizontal not far from Tampico, Mexico. In this work, boring in soft shale, the machine is doing rapid and accurate work, covering a high percentage of core.

Sullivan Mounted Diamond Drills are built in two sizes. "CN" 1000 ft. capacity and "N" 2000 ft., both removing 2-inch core. The Class "N" heavy duty machine has a special automatic chuck permitting the use of a grief stem for fish tailing and utilizing mud fluid when necessary. Send for new Bulletin 1580-B.

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according to geographical location:

Geographical Distribution of Atlantic Coast Gasoline Exports
(Figures in barrels of 42 gallons each)

Shipments to—	Bbls.	Per Ct.
European countries	4,055,084	53.19
South American countries	1,249,461	16.39
Africa	965,833	12.66
Australia, New Zealand and Oceania	946,525	12.41
Mexico, Central America, Panama, West Indies	144,649	2.90
Canada	41,533	.55
Total Atlantic Coast	7,623,955	100.00

In the following table are shown the gasoline shipments from Atlantic Coast ports to the principal destinations, the total gasoline shipments from the United States to these countries and proportion of Atlantic Coast shipments to the total shipments. The information in this and the succeeding tables was compiled from the records of the Bureau of Foreign and Domestic Commerce, Department of Commerce.

Exports of Gas Oil and Fuel Oil, Atlantic Coast, 1925

Shipments of gas oil and fuel oil from the Atlantic Coast during 1925 totaled 2,703,428 bbls., or 8.3 per cent of the 32,508,547 bbls. exported from the United States. Shipments from the various customs districts were as follows:

Gas Oil and Fuel Oil Exports, Atlantic Coast, 1925

From Customs Dist. of—	Bbls.
South Carolina	808,787
Philadelphia	755,351
New York	509,347
Maryland	409,388
Massachusetts	152,352
Georgia	44,191
Vermont	12,985
Florida	10,622
Maine and New Hampshire	405
Total Atlantic Coast	2,703,428

The destinations of these shipments have been grouped, in the following table, according to geographical location:

Geographical Destination of Atlantic Coast Exports of Gas Oil and Fuel Oil, 1925

Shipments to—	Bbls.	Per Ct.
European countries	1,598,177	59.1
Canada	962,932	35.6
Africa	81,516	3.0
South American countries	29,980	1.1
Mexico, Central America, Panama, West Indies	23,109	.9
Australia	7,702	.3
Others	12	...
Total Atlantic Coast	2,703,428	100.0

Gasoline Shipments to Principal Countries, 1925

Country—	Shipments from Atlantic Coast Bbls.	Shipments from U. S. Bbls.	Pct. Atlantic Coast Shipm'ts to Total U. S. Shipments
United Kingdom	908,220	8,236,913	11.3
France	723,001	6,142,926	11.7
Italy	448,091	1,052,273	42.6
Germany	417,540	1,102,689	37.9
Netherlands	347,665	901,901	38.5
Denmark	327,237	515,260	63.5
Belgium	244,998	1,157,622	21.2
Sweden	230,773	479,168	48.2
Norway	107,601	139,929	76.9
Portugal	81,544	81,544	100.0
Spain	81,383	674,409	12.1
Irish Free State	71,141	71,141	100.0
Finland	59,268	114,226	52.0
Other European	6,622	6,622	100.0
Africa	965,833	1,293,614	73.2
Australia	632,241	1,589,123	39.8
New Zealand	277,288	794,413	34.9
Oceania	336,996	43,970	84.1
Argentina	443,413	720,148	61.6
Brazil	569,682	1,012,601	56.3
Uruguay	197,596	220,809	86.0
Other South American	38,770	78,149	49.6

Exports of Kerosene From Atlantic Coast, 1925

Forty-one per cent of the kerosene exported from the United States in 1925 was shipped from the Atlantic Coast, being 8,677,710 bbls. out of a total of 21,074,667. Atlantic Coast shipments of kerosene in containers totaled 4,232,400 bbls., or 72 per cent of the national total of 5,901,392 bbls., while New York alone exported 3,774,656 bbls. or 64 per cent of the national total. Bulk shipments from the Atlantic Coast totaled 4,445,310 bbls., or 29 per cent of the national bulk shipments of 15,173,275 bbls. Of the Atlantic Coast shipments, 6,848,481 bbls. were exported from New York and 1,818,055 bbls. from Philadelphia. Kerosene exports from Atlantic Coast ports during 1925 amounted to 63.5 per cent of the kerosene production of Atlantic Coast refineries during the year. Kerosene was shipped to 89 countries.

The destination of kerosene shipments from the Atlantic Coast have been grouped, in the following table, according to geographical location:

Geographical Distribution of Atlantic Coast Kerosene Exports, 1925

Shipments to—	Bbls.	Per Ct.
European countries	4,241,524	48.9
S. American countries	921,981	10.6
Africa	745,922	8.6
Australia, New Zealand and Oceania	555,544	6.4
Orient and Near East	2,079,682	24.0
Mexico, Central America, Panama, West Indies	131,020	1.5
Canada	2,037	...
Total Atlantic Coast	8,677,710	100.0

In the following table are shown the kerosene exports from the Atlantic Coast to the principal countries to which shipments were made in 1925, the total kerosene shipments from the United States to these countries and the proportion of Atlantic Coast shipments to the total shipments:

Kerosene Shipments to Principal Countries, 1925

Country—	Shipments from Atlantic Coast Bbls.	Shipments from U. S. Bbls.	Pct. Atlantic Coast Shipm'ts to Total U. S Shipments
United Kingdom	1,137,294	2,548,191	44.6
France	383,791	1,428,201	26.9
Italy	379,386	538,779	70.4
Germany	105,613	750,537	14.1
Netherlands	896,682	1,848,437	48.5
Denmark	506,961	673,788	75.2
Belgium	295,181	711,712	41.6
Sweden	139,976	241,340	57.6
Norway	91,018	233,080	39.0
Portugal	92,125	92,125	100.0
Spain	68,628	156,780	43.8
Irish Free State	112,629	144,099	78.1
Finland	29,451	174,741	16.8
Africa	745,922	1,066,920	69.9
Australia	408,913	570,513	71.7
New Zealand	107,793	122,395	88.1
Oceania	38,838	41,909	92.6
Argentina	243,655	324,791	75.0
Brazil	521,569	656,611	79.4
Uruguay	136,323	194,690	70.0
Orient and Near East	2,075,682	7,989,740	26.0

OIL LANDS IN CHILE PROPERTY OF STATE

WASHINGTON, D. C., Apr. 9.—All oil-bearing lands in Chile are hereafter to be regarded as property of the State according to a provisional act passed recently by the Chilean Congress, state advices to the Department of Commerce from Acting Commercial Attache C. C. Brooks, at Santiago. The act amends the existing mining laws of the country.

Article 5 of the Chilean National Mining Code, which reserves all guano and nitrate of soda deposits to the State, has been amended to include petroleum deposits, while a provision of the new law cancels all petroleum concessions now in force that are not developed within one year, after December 26, 1926. In every case where those now possessing petroleum concessions or oil land claims desire to develop their holdings, the properties must again be surveyed under the supervision of the State within the one year period. Failure to comply with this requisite, the law states, is sufficient cause to declare the concession or claim null and void.

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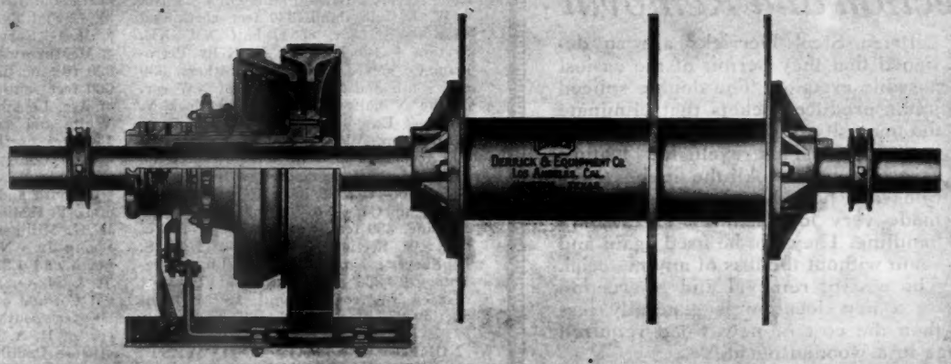
A Complete Line of Better Oil Well Equipment



Emsco Chain Driven Sand Reel

THE Modern Sand Reel of extremely simple design embodying unusual flexibility, smoother operation, increased bailing speed, and a saving of 15% to 25% in fuel consumption. Has ample power to handle any load with sufficient "slip" to prevent snapping of lines. Positive enough to start bailer from bottom of a sand-clogged well. Ample "give" if bailer hangs up. Maximum braking efficiency. Adaptable to steel or wooden rigs and equipped with the usual control.

We also furnish the Emsco Chain Driven Sand Reel Attachment (illustrated below) for converting friction type reels. The change can easily be made, and at a minimum cost.

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POINTERS on Steel Derricks

Easy Erection and Removal

O'Brien Steel Derricks are so designed that they permit of the easiest possible erection. The double spliced joints produce sockets that eliminate the necessity of holding the legs while bolting up. This exclusive feature saves much time. All the field connections are bolted and the panels are made very low, making for ease in handling. They can be used again and again without the loss of any material. The cost of removal and re-erection on a new location is generally less than the cost of new wood required to replace breakage in a wooden outfit.

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Owing to the increasing demand in the oil fields for injectors to operate on higher pressures, this high pressure injector is recommended where boilers are operated at pressures to 200 pounds.

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NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE FIRST REPORTS

Hutchinson County

Brookins and others' No. 2 Johnson Brothers, 330 feet north and 165 feet west of SE cor. of east 10 acres of west 20 acres of the N half of NW, Section 22, Block Y. Derby Oil Co. and others' No. 2 Johnson Brothers-A 330 feet south and east of NW cor. SE NW, Section 22, Block Y; No. 3, 330 feet north and west of SE cor. SE NW of the same section. Great Plains Oil Co.'s No. 1 W. L. Kingsland, 330 feet north and west of SE cor. of E half NW NE, Section 4, Block, Block Y. Kelly Petroleum Co.'s No. 1 Johnson Brothers, 330 feet south and 265 feet east of NW cor. of the N half of Section 22, Block Y. Midwest Exploration Co.'s No. 2 J. A. Whittenburg-Wilson, 330 feet north and 990 feet east of SW cor. of north 80 acres, of south 260 acres of Section 67, Block 46, H. & T. C. Survey. Phillips Petroleum Co.'s No. 5 W. L. Kingsland-Lansing, 330 feet south and east of NW cor. SW, Section 6, Block B-4, D. & S. E. Survey; No. 13 J. A. Whittenburg-Patsburg, 330 feet south and 770 feet east of NW cor. of south 160 acres of Section 67, Block 46, H. & T. C. Survey.

NORTH CENTRAL AND WEST TEXAS FIRST REPORTS

Archer County

Barnsdall Oil Co. and P. Trahan's No. 1 J. J. Perkins and others, 150 feet south and east of NW cor. of south 30 acres of west 40 acres of Section 26, League 3, Lenton County School Land, A-117; No. 2, 450 feet south and 150 feet east of NW cor. of south 30 acres of west 40 acres of the same section. L. T. Burns' No. 1 Annie P. Jackson-A, 150 feet south and west of NE cor. of the S half of Lot 104, W. B. Aldridge Survey, A-2; No. 6 J. H. Turbeville-E, 450 feet north and 150 feet east of SW cor. of his 72-acre lease of Section 124, Club Ranch Subdivision; No. 7, 150 feet north and 1,350 feet east of SW cor. of his same 72-acre lease. S. Kruger and J. I. Staley's No. 1 J. H. Turbeville, 150 feet south and west of NE cor. of Robert Carson Survey, No. 146. Petroleum Production Co.'s No. 5 J. H. Turbeville-C, 150 feet south and east of NW cor. of their 20-acre lease out of the same survey. Plains Production Co.'s No. 4 Belle Z. Lyles, 150 feet north and west of SE cor. of Section 2, S. P. R. R. Survey, A-1,231. Pois & Schultz's No. 4 J. B. Miller, 480 feet south and 1,700 feet west of NE cor. of Section 19, A. T. N. C. L. Survey. Royal Petroleum Co.'s No. 2 L. F. Wilson, 140 feet north and 150 feet east of SE cor. of Section 2, S. P. R. R. Survey, A-1,231, and located in D. I. & C. Survey, A-1,093. Simms Oil Co. and L. T. Burns' No. 10 J. H. Turbeville-A. 100 feet south and 1,050 feet east of NW cor. of their 80-acre lease "A" out of Robert Carson Survey, No. 142. United Producers Co.'s No. 2 J. H. Turbeville-B, 450 feet north and 150 feet west of SE cor. of their 40-acre lease "B" out of Section 124, Club Ranch Subdivision. C. U. Beasley and others' No. 1 Abercrombie & Taylor-B, 450 feet south and west of NE cor. of Section 15, Club Ranch Subdivision. Bridwell & Heydrick's No. 16 Abercrombie & Taylor-A, 150 feet south and 810 feet west of NE cor. of south 20 acres of SE 40 acres SE, Section 2, S. P. R. R. Survey, A-1,281. Craig & Wilson's No. 2 T. J. Longley estate, 675 feet south and 1,340 feet east of NW cor. of J. B. Hinds Survey, A-184. Humble Oil & Refining Co.'s No. 1 H. L. and J. F. Ward, 150 feet north and west SE cor. Section 1,381, T. E. & L. Survey. Marland Oil Co. and Consolidated Oil Co.'s No. 5 H. L. and J. F. Ward, 150 feet north and east SW cor. of Section 1,379, same survey. Sun Oil Co.'s No. 3 F. C. Green-B, 450 feet north and 1,750 feet east of SW cor. of Joseph Levins Survey, A-259.

Brown County

Canyon Oil & Gas Co.'s No. 6 J. W. Ellsberry, 1,800 feet north and 2,050 feet east of SW cor. of J. W. Ellsberry's 255-acre tract out of Lot 1, John L. Williams Survey, No. 146. Cooke and others' No. 1 J. R. Eubanks, 330 feet north and east of SW cor. NW SW, Section 32, H. T. & B. Survey, A-2,023. Ditto Oil Interest's No. 1 R. W. Boler, 750 feet north and 150 feet east of SW cor. of R. W. Boler's 190-acre tract out of Matilda Cherry Survey, No. 25. Forest Oil Co.'s No. 2 M. L. Smith, 150 feet north and 1,800 feet east of SW cor. of M. L. Smith's 320-acre tract out of S. A. & M. G. Survey, No. 1, A-849. Gilman & McMurray's No. 1 John M. Baugh, 3,020 feet northeast of southwest line and 660 feet southeast of northwest line out of Ato, Lockmer Survey, No. 59. Gordon White and others' No. 1 J. H. Brown, 150 feet north and east of SW cor. of Joseph Coffey Survey, A-1,471. Mexana Oil Co.'s No. 4 L. V. Eddington, 5,097 feet south and 640 feet east of NW cor. of L. V. Eddington's 725-acre tract out of R. G. Milliken Survey, No. 142. O. H. Shoup Jr.'s No. 16 John Byler, 795 feet north and 1,285 feet east of SW cor. of T. & N. O. Survey, No. 43. Superior Oil Co. and others' No. 2 R. A. Brooke, 500 feet south and 800 feet west of NE cor. of R. A. Brooke's 360-acre tract out of Jose Padilla Survey, No. 645. Westbrook and others' No. 1 F. Turner, 150 feet north and 650 feet east of SW cor. of NE, Section 46, H. T. & B. Survey. Alford Oil Co.'s No. 2 C. J. Davis, 150 feet south and west of NE cor. of west 100 acres of north 215 acres of C. J. Davis' 395-acre tract out of Moses Little Survey, No. 40. C. H. Brands and others' No. 1 J. S. Ragsdoll, 300 feet south and 150 feet east of NW cor. of NE, W. S. Armstrong Survey No. 41. H. C. Davis' No. 1 W. T. Hawkins, 7,200 feet north and 300 feet east of SW cor. of James Forrester Survey, No. 316, A-313. Ditto Oil Interest's No. 1 Mrs. Bettis, 1,180 feet north and 7,335 feet east of SW cor. of Mrs. Bettis' 780-acre tract out of Hiram Rosin Survey, No. 217, A-779. Zoch & McCamey's No. 1 E. Starkey, 600 feet south and 550 feet west of the most northerly NE cor. of Elizabeth Starkey's 180-acre tract out of George Waters Survey, No. 114.

Callahan County

Tallett & Graham's No. 1 F. L. Alvord, 2,900 feet south and 150 feet west of NE cor. of Section 76, Bayland Orphan Asylum Land.

Coleman County

Fred Shields and others' No. 1 J. H. Nance, 2,200 feet north and 2,700 feet west of SE cor. of Miguel Benites Survey, No. 670 and located in the town of Coleman. Hoffer Oil Corp.'s No. 1 Mrs. P. B. Cameron, 1,400 feet north and 2,150 feet west of the most southerly SE cor. of J. A. H. Cleveland Survey, No. 495.

Comanche County

Hickey and others' No. 1 John Maxwell, 150 feet north and 8,500 feet east of SW cor. William Shipp Survey, being 150 feet north and west of SE cor. of J. Maxwell's 167-acre tract. Trojan Oil Co.'s No. 1 B. F. Barnes, 5,900 feet north and 330 feet west of SE cor. of James Walker Survey, being 330 feet north and west of SE cor. of B. F. Barnes' 160-acre tract.

Crane County

Church & Fields' No. 1 University-Duoll, 330 feet north and 990 feet east of SW cor. of Section 39, Block 30, University Land. Independent Oil & Gas Co.'s No. 2 University Land, 330 feet south and east of NW cor. of the E half NW Section 46, Block 30, same land.

Cooke County

American Refining Co.'s No. 12 J. A. Dennis, 1,500 feet north and 400 feet west of SE cor. of their 80-acre lease out of T. J. Moss Survey, A-736; No. 13, 1,350 feet north and 150 feet east of SW cor. of their same 80-acre lease. Kewanee Oil & Gas Co.'s No. 1 H. L. Dennis, 2,450 feet south and 150 feet east of NW cor. of J. B. McClyman Survey. Sun Oil Co.'s No. 2 J. A. Dennis, 320

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Wire Rope
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drilling
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Marion Machine and Foundry Co. and Branches, Marion, Ind.
Fort Worth Well and Machinery Co., Fort Worth, Texas
Grinnell Company of the Pacific, Los Angeles, California
AMERICAN CABLE COMPANY
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District Offices:
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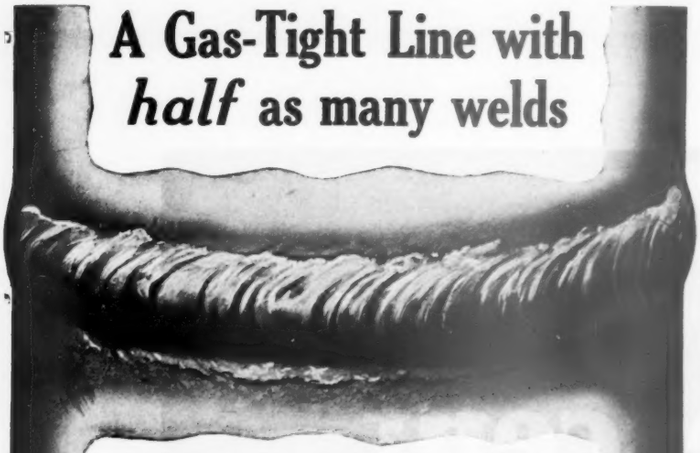

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DETROIT, MICHIGAN

Manufacturers of McCord Force Feed Lubricators

feet south and 150 feet west of NE cor. of their 32-acre lease out of T. J. Moss Survey, A-136. The Texas Company's No. 1 H. L. Dennis, 150 feet north and west of SE cor. of south 50 acres of north 100 acres of T. J. Hutchinson Survey, A-484.

Crockett County

William Schaffer and others' No. 2 University Land, 1,350 feet north and 2,610 feet east of SW cor. of Section 9, Block 47, University Land.

Howard County

Bristow & Herrick's No. 3 A. J. Hooks, 650 feet south and 200 feet east of NW cor. of Section 14, Block 29, W. & N. W. Survey. Magnolia Petroleum Co.'s No. 3 Kelly Chalk, 2,440 feet south and 200 feet east of NW cor. of Section 124, Block 29, same survey. Eastland Oil Co.'s No. 5 H. R. Clay-A, 650 feet south and 200 feet west of NE cor. of Section 139, Block 29, same survey. Pure Oil Co.'s No. 1 Otis Chalk, 200 feet north and 2,440 feet west of SE cor. of Section 125, Block 29, same survey; No. 2, 2,440 feet north and 200 feet west of SE cor. of the same section. Tidal Oil Co.'s No. 1 Otis Chalk, 200 feet south and 2,440 feet west of NE cor. of Section 140, Block 29, same section; No. 2, 2,440 feet south and west of NE cor. of the same section.

Jack County

Holman heirs' No. 1 Mrs. Holman, 250 feet north and west of SE cor. NE, Section 4, S. P. R. R. Survey, A-1,422.

Jones County

Kirk & Brewer's No. 1 J. H. Milsap, 150 feet east of the middle of the west line of J. H. Milsap's 355-acre tract out of Redriguez Survey, No. 357, A-292.

Kent County

Marland Oil & Texon Oil & Land Co.'s No. 1 N. V. Bilby, 1,320 feet north and east of SW cor. of John B. Rector Survey, No. 49, Block K.

Montague County

Pure Oil Co.'s No. 4 J. E. Crowe and others, 1,430 feet north and 200 feet east of SW cor. of their 100-acre lease out of J. Chambliss Survey, A-123; No. 2 L. Keck, 2,600 feet north and 200 feet west of the most easterly SE cor. of L. Keck's 225-acre tract out of W. Donoho Survey, A-178; No. 8 J. W. Maddox-C, 535 feet north and 650 feet east of SW cor. of their lease out of Lot 4, C. W. Thompson Survey, A-741.

Nolan County

A. G. Malone and others' No. 1 Mc-Elmurray, center of the E half of SW, Section 36, Block 20, T. & P. Survey.

Palo Pinto County

Jack Dalton Oil Co.'s No. 7 R. D. Dalton, 990 feet south and 1,450 feet west of NE cor. of Section 1,789, T. E. & L. Survey, being 150 feet west and 300 feet east of the middle of the north line of Dalton Bell Oil Co.'s 40-acre lease. Texas Pacific Coal & Oil Co.'s No. 153 J. N. Stuart, 990 feet north and 2,330 feet east of SW cor. of W. J. Betterton Survey, No. 1, A-1,626; No. 154, 2,025 feet north and 850 feet west of SE cor. of Section 71, Block 4, T. & P. Survey. Corzelius & Outlaw's No. 1 T. E. Terrell, 1,100 feet south and west of NE cor. Lot 10, McLennon County School Land, Leagues 3 and 4. The Texas Co.'s No. 13 L. A. Hightower, 155 feet north and 2,855 feet east of SW cor. Lot 1, William Van Norman Survey. Chestnut & Smith Inc.'s No. 1 H. E. Eppler, 1,050 feet south and 250 feet west of NE cor. SE, Section 57, Block 3, H. & T. C. Survey.

Reagan County

Big Lake Oil Co.'s No. 120 University Land, 920 feet south and 1,320 feet west of NE cor. of Section 1, Block 2, University Land; No. 121, 2,240 feet north and 920 feet east of SW cor., of Section 12, Block 2, same land; No. 122, 2,240 feet north and 1,710 feet west of SE cor. of the same section; No. 123, 1,720 feet south and 2,240 feet east of NW cor. of the same section. Tidal Oil Co.'s No. 1 University Land, 330 feet south and east of NW cor. NE, Section 20, Block 8.

Shackelford County

J. S. Cosden Inc.'s No. 1 L. G. Davis, 150 feet south and west of NE cor. NW SW, Section 41, Block 12, T. & P. Survey. E. R. Perry's No. 1 Lewis Ackers, 660 feet south and east of NW cor. NW SW, Section 39, Block 13, same survey. Prairie Oil & Gas Co.'s No. 1 W. D. Reynolds, 150 feet south and east of NW cor. SE NW, Section 38, Block 12, same survey. Southern Petroleum Co.'s No. 5 J. F. Dyer, 150 feet north and 450 feet east of SW cor., Section 63, Block 11, same survey.

Stephens County

Denny & Andrews' No. 1 M. E. Fambrough, 300 feet north and east of SW cor. of Section 16, Block 6, T. & P. Survey.

Upton County

Roxana Petroleum Corp.'s No. 22 Della Bowen, 2,310 feet north and 990 feet west of SE cor., Section 6, G. C. & S. F. Survey, A-1,-57; No. 23, 2,254 feet south and 330 feet west of NE cor. of the same section.

Wichita County

Bailey-Damuth Drilling Co. and others' No. J. L. & T. J. Waggoner, 750 feet north and 150 feet east of SW cor. of Lot 14, M. A. Willis Survey, A-548; No. 7, 450 feet north and 150 feet east of SW cor. of Lot 14, same survey; No. 8, 102 feet south and 150 feet east of NW cor. of Lot 14, same survey; No. 9, 102 feet south and 450 feet east of NW cor. Lot 14, same survey; No. 10, 150 feet north and west of SE cor., Lot 6, Section 8, G. H. & H. Survey, A-748; No. 11, 810 feet north and 150 feet east of SW cor. of Lot 14, M. A. Willis Survey, A-548; No. 12, 177 feet south and 450 feet east of NW cor. of Lot 14, same survey. Murchison Oil Co. & Cranfill's No. 1 J. L. & T. J. Waggoner, 160 feet south and west of NE cor. of Lot 33, Hezekiah George Survey, A-454. Seaboard Oil & Gas Co.'s No. 1 B. N. Ferguson, 150 feet south and 300 feet east of NW cor. of J. T. Lewis Survey, A-462. C. P. Sheldon and others' No. 4 C. Frankl and others-A, 150 feet south and east of NW cor. of north 50 acres of Section 328, Waggoner Colony Lands. The Texas Company's No. 33 J. H. Marriott, 150 feet south and east of NW cor. of their 110-acre lease out of Section 1, S. P. R. R. Survey, A-280.

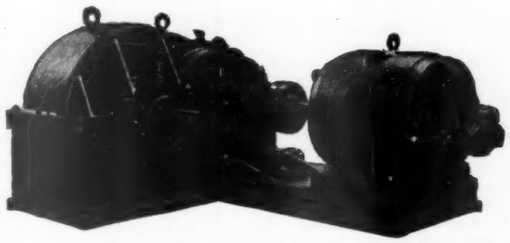
Wilbarger County

Fain-McGaha Oil Corp.'s No. 1 W. T. Waggoner-G, 150 feet north and east of SW cor. NE NE of Section 51, Block 4, H. & T. C. Survey; No. 1 W. T. Waggoner-H, 150 feet south and west of NE cor. NW SW same section. Milham Corp.'s No. 22 W. T. Waggoner-L, 190 feet north and 785 feet west of the most easterly SE cor. of their 35-acre lease "L" out of Section 42, Block 4, same survey. Murchison Oil Co. & Cranfill's No. 1 W. T. Waggoner-C, 150 feet north and east of SW cor. of south 120 acres of west 160 acres of Section 52, Block 4, H. & T. C. Survey.

Young County

Bridwell & Heydrick's No. 1 Dr. C. B. Hamilton, 150 feet south and west of NE cor. of Section 1,480, T. E. & L. Survey. Hunter and others' No. 1 H. O. & E. R. Prideaux, 150 feet north and 220 feet east of SW cor. NW 15 acres of Section 16, Young County School Land, A-1,284. Reed and others' No. 7 J. W. Jack, 1,520 feet south and 1,340 feet east of NW cor. of Section 23, same school land; No. 5 Mrs. O. W. Mathews, 750 feet south and 150 feet west of NE cor. of their 80-acre lease out of A. Rohus Survey, A-240. Kubert Oil Corp.'s No. 3 H. O. & E. R. Prideaux, 300 feet north and 385 feet east of SW cor. of north 54 acres of Section 16, Young County School Land, A-1,284. Henry Dyer and others' No. 1 A. M. Graham Estate, 1,450 feet north and 2,330 feet west of SE cor. of Paul Pier Survey, A-219, being 150 feet SE of NW line and 150 feet west of the east line of their 15-acre lease. Pitzer & West's No. 1 F. A. Burnett, 200 feet south and west of NE cor. of Section 7, T. & N. O. Survey. Roeser & Pendleton's No. 1 Marg. B. Davis, 330 feet north and 1,500 feet east of SW cor., of S. N. Daniels Survey, A-1,413.

WAGNER-PHILADELPHIA OIL WELL UNIT



Wagner-Philadelphia double reduction herringbone enclosed type A gear unit complete with 15-40 h.p., 1140 r.p.m. Wagner double rated oil field motor.

The Wagner-Philadelphia Oil Well Unit eliminates band wheel and belts and delivers power at the pitman with a minimum loss. It is designed for use with standard type motors or engines.

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The Kennedy Valve line for refinery service includes low, medium, high, extra heavy, and extreme pressure gate valves up to 2500-lb. test pressure in a wide range of sizes, and with screwed or flanged ends.

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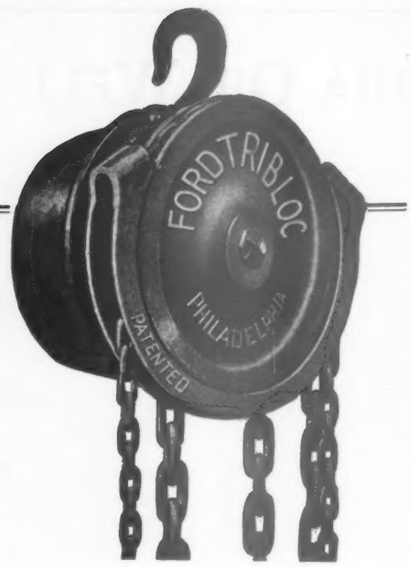

Its "Backbone" is strong *and in the right place*

Tribloc Chain Hoists afford consistent, satisfactory service under the most gruelling tests because the "backbone"—that small part hidden inside the gear case—possesses a 3½ to 1 factor of safety. No amount of frills will make a hoist serviceable unless this part has strength in the right place. Unstinted effort is expended to maintain this and other Tribloc parts to high standards.

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We also manufacture "THE MOTORBLOC"—
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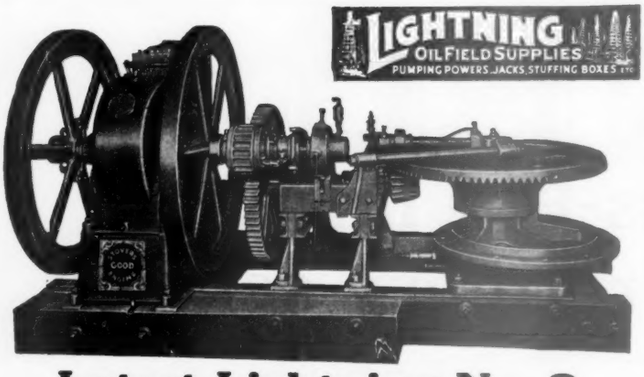

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The Lightning No. 3 power is similar to our No. 2 but is more powerful and a higher-grade machine throughout. Inverted drive gear forms its own guard. Rod lines actuated by broad-faced eccentric, same as used on band wheel powers, delivers a full 18" stroke. Main eccentric shaft 4½" diameter, supported at both ends. Hub has bearing 17" long, lubricated by a positive acting plunger pump which draws oil out of the base and delivers it into the top of the eccentric hub. This oil also is fed into the eccentric and passes back into the base and is used over again. The engine is also equipped with a positive lubricating system of its own.

WEIGHT

Belt Drive—24 to 28" pulley, 280 to 300 R. P. M. ..... 2700 lbs.
Engine Power—12 H. P., direct connected, Madison Kipp Lubricator ..... 5550 lbs.

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Pumping Powers, Geared and Band Wheel; Steel Grips, Polished Rod Rotators, Casingheads, Polish Rod Clamps, Rod Racks, Balanced Pumping Jacks, Centrifugal Pumps, Beam Yoke Castings for Wire Line Hangers, Beam Hangers, Sucker Rod Spiders, High Speed Elevators, Stuffing Boxes, Hooks and Grips.

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Oil Field Supplies **Kansas City, Mo.**

GASOLINE TANK-WAGON PRICES LOWEST SINCE JANUARY 1, 1926

The general tendency for the tank wagon prices is downward in sympathy with the lower crude prices. The average tank wagon price based on the price in The Oil and Gas Journal's Fifty Representative Cities on April 1 was 16.21 cents per gallon, or a little more than three-quarters of a cent below that of March 1.

The weakening of the price has been general since July of last year, and, as shown in the accompanying table, the April 1 price is about 3½ cents below that of last July and is the lowest since January 1, 1926. Accompanying this falling tank wagon price, there has been a gradual raising of the average tax. On March 7 New Mexico increased the tax from 3 to 5 cents, on March 16 Texas increased from 1 to 3 cents, and on April 1 Maryland increased from 2¼ to 3½ cents, making the average tax in the 50 cities 2.69 cents compared to 2.54 cents on the first of the previous month.

AVERAGE TANK WAGON PRICE IN 50 CITIES

January 1, 1926	16.133
February 1	16.213
March 1	17.267
April 1	18.517
May 1	18.487
June 1	19.607
July 1	19.697
August 1	19.697
September 1	19.587
October 1	19 167
November 1	18.187
December 1	17.607
January 1, 1927	17.567
February 1	17.469
March 1	17.007
April 1	16.210

GASOLINE PRICES EFFECTIVE APRIL 1, 1927

Table showing gasoline tank wagon prices as of April 1, 1927, exclusive of taxes, in 60 representative cities, including the amount and the date of changes since March 1, 1926. High and low prices and state taxes also given.

	Prices Mar. 1	March Changes		Prices Apr. 1	High and Low 1926		High and Low 1925		Apr. 1 1927
Birmingham, Ala.	18.0	8 17.0	....	17.0	20.0	16.0	20.0	13.0	4.0
Phoenix, Ariz	19.0	29 17.0	....	17.0	22.0	19.0	20.0	18.0	3.0
Little Rock, Ark.	14.0	14 13.0	....	13.0	18.0	14.0	19.0	12.0	4.0
San Francisco, Calif.	14.0	19 12.0	....	12.0	16.0	13.0	15.0	13.0	2.0
Denver, Colo.	18.0	2 17.0	23 15.0	15.0	20.0	16.0	20.0	12.0	2.0
Hartford, Conn.	21.0	....	....	21.0	21.0	17.0	21.0	15.0	2.0
Dover, Del.	18.0	....	....	18.0	20.0	17.0	21.0	15.0	2.0
Jacksonville, Fla.	14.0	11 15.0	....	15.0	19.0	12.0	19.0	12.0	4.0
*Atlanta, Ga.	16.0	11 17.0	....	17.0	21.0	14.0	21.0	14.0	3.5
Boise, Idaho	21.5	23 19.5	....	19.5	24.0	20.0	21.5	19.0	4.0
Peoria, Ill.	15.2	....	....	15.2	19.2	10.5	19.2	10.5	...
Chicago, Ill.	16.0	....	....	16.0	18.0	15.0	18.0	13.0	...
Indianapolis, Ind.	15.2	....	....	15.2	19.2	16.2	19.2	13.2	3.0
Des Moines, Iowa	13.0	....	....	13.0	19.5	16.0	19.5	13.5	2.0
Wichita, Kans.	14.8	....	....	14.8	16.8	14.8	18.8	8.8	2.0
Louisville, Ky.	15.0	....	....	15.0	20.0	17.0	19.0	12.0	5.0
New Orleans La.	13.5	14 12.5	26 14.5	14.5	17.5	13.5	18.5	11.5	†3.0
Augusta, Me.	21.0	15 20.0	....	20.0	21.0	17.0	22.0	15.0	3.0
Baltimore, Md.	18.0	14 17.0	....	17.0	19.0	15.0	19.0	13.0	4.0
Springfield, Mass.	21.0	....	....	21.0	21.0	17.0	21.0	15.0	...
Detroit, Mich.	15.8	....	....	15.8	19.8	16.8	19.8	13.8	2.0
Duluth, Minn.	16.5	....	....	16.5	20.5	15.5	20.5	13.5	2.0
Natchez, Miss.	15.5	19 14.5	....	14.5	18.5	15.5	18.5	11.5	4.0
Kansas City, Mo.	14.0	....	....	14.0	18.9	15.9	18.9	12.9	†3.0
Helena, Mont.	22.0	2 21.0	23 19.0	19.0	24.0	21.0	24.0	18.0	3.0
Omaha, Neb.	14.25	....	....	14.25	19.25	14.25	19.25	10.0	2.0
Reno, Nev.	18.0	19 16.0	....	16.0	19.5	16.5	18.5	16.5	4.0
Newark, N. J.	18.0	14 17.0	....	17.0	19.0	15.0	19.0	13.5	...
Albuquerque, N. M.	19.0	7 18.0	23 17.0	17.0	26.5	20.0	23.5	19.5	5.0
New York, N. Y.	21.0	15 20.0	....	20.0	21.0	17.0	22.0	15.0	...
Charlotte, N. C.	18.0	14 17.0	....	17.0	19.5	15.5	20.0	12.0	4.0
Fargo, N. D.	17.9	....	....	17.9	21.0	18.9	20.9	14.9	2.0
Cleveland, Ohio	19.0	21 18.0	....	18.0	20.0	16.0	18.5	15.0	2.0
Tulsa, Okla.	14.0	5 13.0	....	13.0	17.0	13.0	18.0	9.5	3.0
Portland, Ore.	14.0	19 12.0	....	12.0	16.0	13.0	15.0	13.0	3.0
Philadelphia, Pa.	18.0	13 17.0	....	17.0	20.0	17.0	21.0	15.0	‡2.0
Providence, R. I.	21.0	....	....	21.0	21.0	17.0	22.0	15.0	1.0
Charleston, S. C.	18.0	14 17.0	....	17.0	19.5	15.0	20.5	12.5	5.0
Huron, S. D.	16.5	....	....	16.5	20.5	14.0	20.0	13.0	3.0
Memphis, Tenn.	14.0	....	....	14.0	18.5	13.5	18.5	10.5	3.0
Dallas, Tex.	13.0	3 12.0	....	12.0	17.0	13.0	18.0	10.0	3.0
Salt Lake City, Utah	19 5	....	23 17 5	17.5	22 5	18.5	21.5	17.5	3.5
Burlington, Vt.	21.0	15 20.0	....	20.0	21.0	18.0	22.0	15.0	2.0
Norfolk, Va.	18.0	14 17.0	....	17.0	19.0	15.0	20.0	14.5	4.5
Washington, D. C.	18.0	14 17.0	....	17.0	19.0	15.0	19.0	14.0	2.0
Charleston, W. Va.	18.0	14 17.0	....	17.0	19.0	15.0	19.0	14.0	3.5
Milwaukee, Wis.	15.1	....	....	15.1	19.1	16.1	19.1	13.1	2.0
Casper, Wyo.	18.0	2 17.0	23 15.0	15.0	20.0	17.0	20.0	15.0	3.0
Seattle, Wash.	14.0	19 12.0	....	12.0	16.0	13.0	15.0	13.0	2.0
Minneapolis, Minn.	14.2	....	....	14.2	20.2	15.2	20.2	13.2	2.0
Average price	17.007	....	....	16.21	19.717	15.713	19.647	13.629	2.69

Note: Prices at points in the Standard Oil Co. of Indiana, effective January 19, based on 1-cent discount for 50-gallon dumps with following exceptions: Wichita discount prices effective for entire month and Chicago prices entire month based on dumps of 100 gallons. *Does not include ⅛-cent inspection fee. †State tax 2 cents, remainder city tax. ‡Tax paid by retail dealer.

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and saving them time, that makes a good-sized cut in costs

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As this user writes:

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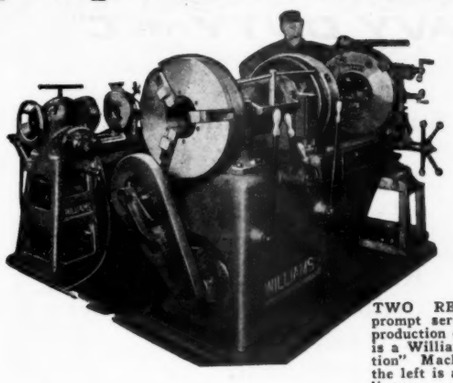

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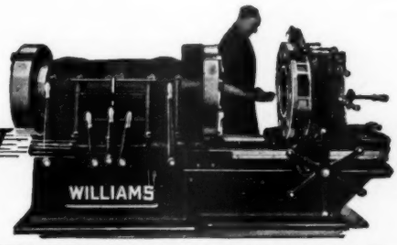
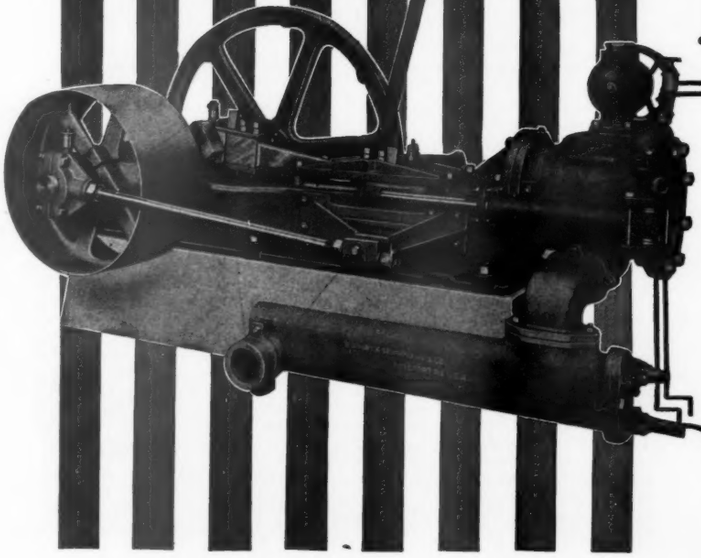


Bovaird & Seyfang STEAM DRILLING ENGINES



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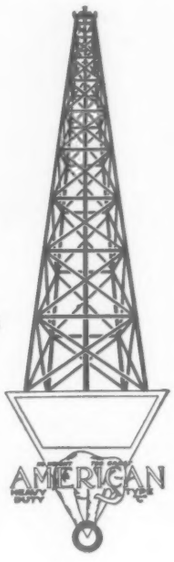

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METHODS OF LUBRICATING POWER CYLINDERS OF DIESEL ENGINES

By W. O. Northcutt*
Sinclair Pipe Line Co.

It is the purpose of this paper to offer constructive criticism of the present methods of applying lubricating oil to power cylinders of Diesel engines and to recommend a method, which the writer believes will be an improvement over the present method. The discussion, the data and the conclusions of this paper are based on an experimental study of this phase of Diesel engine lubrication.

Regardless of what base crude lubricating oils may be made from, oxidation of oils takes place after reaching a certain temperature. This is first noticed in the darkness of color which is the indication of oxidation taking place, forming in the oils undesirable molecules of asphaltenes, the extreme of which is artificial asphalt, a black sticky matter which has a very high coefficient of friction in relation to the original oil. This oxidation of lubricating oils takes place regardless of what care or methods are used by the refineries in refining these oils.

Undesirable Products

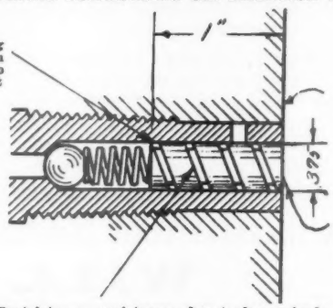
Lubrication is gradually being considered a separate study in regard to the designing of the Diesel engines, and in some cases the advancement has only been obtained by the co-operation of the customer with the Diesel engine manufacturers. If an improper method is used for application of lubricating oils to the power cylinder, the oxidation of the oil is greatly increased, forming undesirable products in the new oil before the oil reaches the pistons for its function of reducing friction. These undesirable products formed by oxidation increase friction rather than reduce it, resulting in a high cylinder and piston ring wear.

With normal conditions, properly designed cylinder liners and piston rings made of the proper material and using a method of applying lubricating oil to the pistons partly perfected, one may expect to obtain 750 to 1,000 hours per .001 inch cylinder liner wear. With the above conditions and a proper method of applying the oil to the pistons, one may expect to obtain from 1,800 to 2,000 hours per .001 inch cylinder liner wear at the maximum cylinder diameter. The arrangement of the lubricating oil piping, the lubricating oil injection tube in cylinders, the size of lubricating oil ports in the cylinder liner and design of the mechanical lubricator and lubricating oil injection tube, are the necessary details to be considered in the control of oxidation of the new oil before reaching the pistons to carry on its function of proper lubrication.

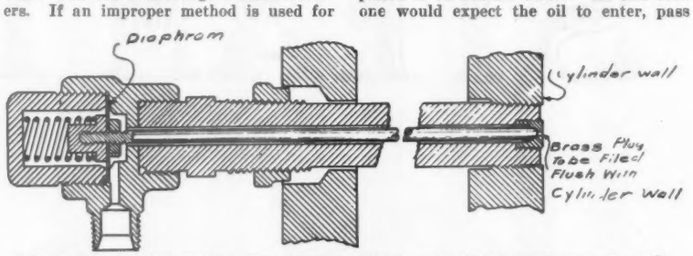
Details Which Assist

Some of the details of cylinder lubrication which assist in the oxidation of the oil are large oil ports in the cylinder liners, air pockets in the lubricating oil injection tubes, air pockets in the lubricating lines between the mechanical lubricator and cylinder check valves, and oil grooves arranged in piston skirts of the pistons or around the inner circumference of the cylinder liner. Take for an illustration a lubricating oil injection tube containing a check valve located near the end of tube which is secured in cylinder liner. From the end of the injection tube leading into the interior of the cylinder liner there is a large oil port eleven-sixteenths inch in diameter forming a pocket approximately five-eighths inch deep; this oil port registers between the fifth and sixth piston ring when the piston is on bottom center. At this time one would expect the oil to enter, pass the check valve on to the pistons; but this is not the case and I am satisfied that there is a pressure of gases behind each piston ring and on the downward stroke of piston the gas pressure behind the bottom or lower piston ring whips out onto the piston skirt the oil that might have passed the check valve or accumulated in the oil port. The piston not being water cooled and the skirt of the piston containing a series of oil grooves around it in which oil will accumulate in a volume that will have a slow heat transfer through it, results in the oil gradually decomposing in those oil grooves into an asphaltic matter, later to be transferred to the cylinder walls for lubricating purpose instead of new clean oil.

SPECIAL LUBRICATING OIL INJECTION TUBE


Groove of spiral plug should lead out from top part of tube to prevent air pocket forming in tube.
1"
Inner wall of cylinder liner.
3/16
Tube to register between first and second piston rings when piston is on the bottom or outer center. Tube to be at the inner circumference of cylinder liner.
Restrictor or resistance plug to have single spiral groove, 1/16-in. wide, 1/16-in. deep, 3/16-in. pitch.

Function of Spiral Groove: To offer a resistance of flow to oil, to balance the impulse of gas pressure that is behind piston rings when piston rings pass over oil port in cylinder liner, therefore preventing new oil from oxidizing, and having oil at the inner portion of cylinder liner for piston rings to pick up and spread into an unoxidized oil film on the cylinder liner walls.

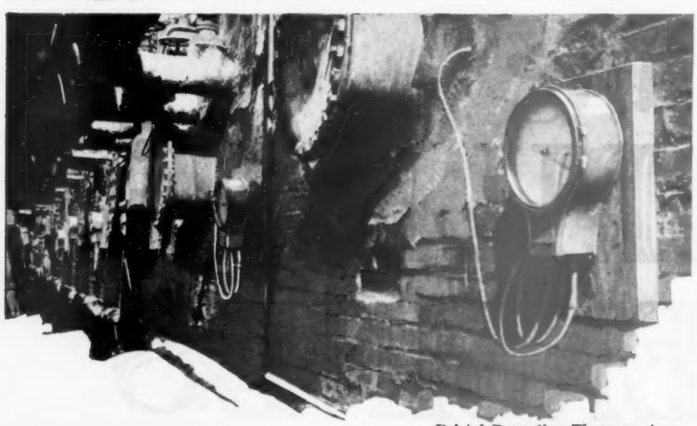


Lubricating oil injection tube. Function: To deliver and maintain lubricating oil at the inner wall of cylinder liner in an unoxidized condition.

Special Tube Designed

A special lubricating oil injection tube, shown in Sketches Nos. 1 and 2, has been designed and has been used for over a year, the function of which is to de-

*Paper read before Petroleum Division, American Society Mechanical Engineers, Kansas City, April 5.



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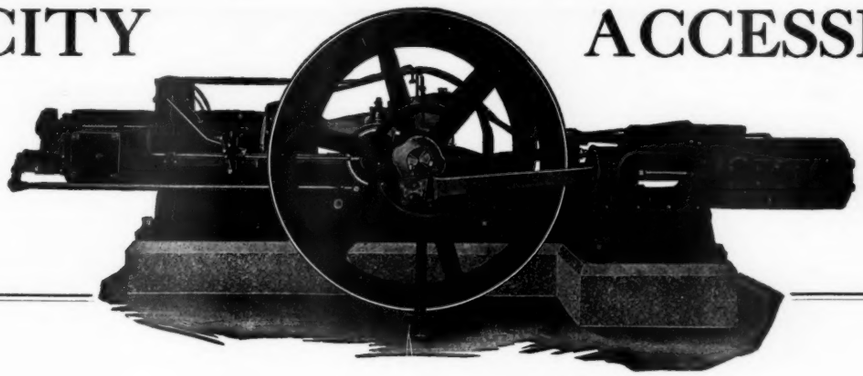

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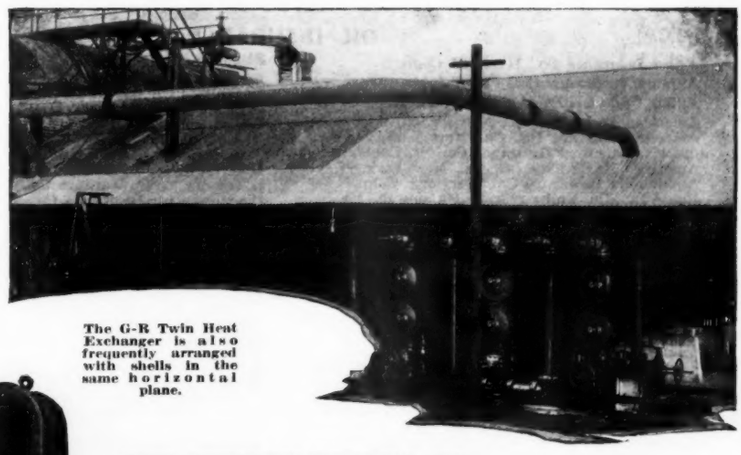
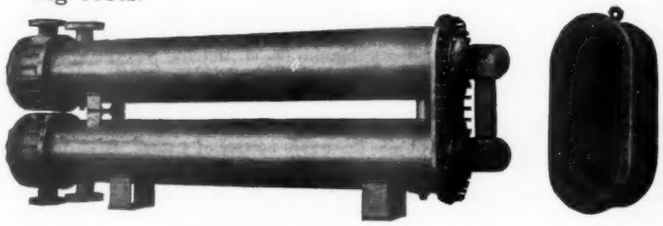


The G-R Twin Heat Exchanger is also frequently arranged with shells in the same horizontal plane.



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liver the oil in an unoxidized condition at the inner portion of the cylinder liner and to register the oil between the first and second ring from the top of the piston when the piston is on bottom center, which assists the piston rings to spread the oil in a film on the walls of the cylinder liner. The injection tube contains a small ball check valve close to the cylinder end, and the cylinder end of injection tube has a small plug pressed in the tubes. This plug has a small spiral groove cut around it. The one end of the plug should terminate at the inner portion of the cylinder liner and the function of this spiral is to overcome the impulse of the gases behind the piston rings as they pass over the oil port in the cylinder liner, keeping the oil from being whipped out onto the piston skirt, therefore keeping the oil at the proper place at the inner portion of the cylinder liner for the piston rings to pick up and spread over the walls of the cylinders in a clean, unoxidized form.

More attention should be paid to the condition of the oil film rather than so much to the quantity. The pulling of pistons and the finding of the cylinder walls well covered with an oil film is often misleading, for it is a very complicated problem to determine what condition this oil film may be in due to the fact that, being improperly applied, it is likely that the oil contains oxidized products that are detrimental to lubrication.

Air pockets exist and air accumulates in the lubricating lines and injection tubes. From the data of an experimental study on the condition of the lubricating oil in these lines specifications will be given below for the new oil, also an analysis of the same oil taken from the injection tubes and branch feeding lines.

Explanatory to this experimental study let us consider a cylinder which has two lubricating oil feed lines from the mechanical lubricator to the check valves, one line at the front and back of the cylinder. From each check valve the lines branch, leading to the lubricating oil injection tubes arranged to have one lower and two upper tubes in which we know that the oil will travel the course of least resistance, therefore the lower injection tube gets the larger portion of oil. Due to the branch feed lines and lubricating oil injection tubes being so arranged as to have air pockets in the system, these branch lines are only partly filled with oil and brings about the oxidation of the lubricating oil by the cylinder gases which results in an irregular supply of oil at the inner portion of the liner. Also this irregular supply is made more irregular by having a lubricator that pumps air as well as oil and consequently the air accumulates in the highest part of the feed lines between the mechanical lubricator and check valve, especially if the lubricator is located above the cylinder check valve which results in the oil being fed downward. The air will separate out in attempting to pump the air and oil downward together. The original specification of four oils are given below in Table No. 1 to show the condition of these new oils:

Table No. 1

	Flash °F.	Fire °F.	Vis. 100°F Saybolt Univ.	Vis. 210°F Saybolt Univ.
Oil No. 1	410	460	410 Sec.	50 Sec.
Oil No. 2	410	470	398 Sec.	55 Sec.
Oil No. 3	425	490	555 Sec.	65 Sec.
Oil No. 4	455	520	1,030 Sec.	85 Sec.

A sample of oil No. 2 shown above was taken out of branch feed lines of cylinders after a year's run for the engine, the analyses of which are given in Table No. 2:

Table No. 2

Vis. Saybolt Univ. 100°F.....		480 Sec.
Water		1.38%
Total sediment		1.78%
Analysis of total sediment—		
Asphaltic matter	0.73%	
Carbonaceous matter	0.94%	
Ash	0.11%	1.78%

The oil is very dark in color and these analyses show the true condition of the oil to which it is converted before reaching the pistons.

The following analyses in Table No. 3 are for oil sample No. 1 taken out of the

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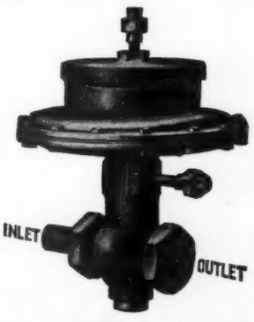

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— TOLEDO — OHIO —

branch feed lines after the lines had been cleaned out and the engine run two weeks.

Table No. 3

Flash, deg. F.		405
Fire, deg. F.		465
Vis. Saybolt Univ. 100°F.		466 Sec.
Vis. Saybolt Univ. 210°F.		60
Acidity No.		0.226
Total sediment		0.42%
Analyses of total sediment—		
Asphaltic matter	.140%	
Carbonaceous matter	.218%	
Ash	.062%	
Ash	.062%	0.42%

The analyses in Table No. 4 are for oil sample No. 1 taken out of the branch feed lines after the lines had been cleaned out as before when the engine had run four weeks.

Table No. 4

Flash, deg. F.		410
Fire, deg. F.		470
Vis. Saybolt Univ. 100°F.		482
Vis. Saybolt Univ. 210°F.		62
Acidity No.		.0560
Total sediment		0.74%
Analysis of total sediment—		
Asphaltic matter	.300%	
Carbonaceous matter	.365	
Ash	.075	0.74%

The following figures in Table No. 5 are for analyses for samples of oil Nos. 1, 2, 3 and 4. These samples were taken out of branch feed lines after the lines had been cleaned and engines had been running 48 hours. These analyses are for the total sediment only.

Table No. 5

Sample of Oil No. 1—Total Sediment, 0.135%	
Analysis of sediment:	
Asphaltic matter	.034%
Carbonaceous matter	.080%
Ash	.021%
Sample of Oil No. 2—Total Sediment, 0.248%	
Analysis of sediment:	
Asphaltic matter	.049%
Carbonaceous matter	.164%
Ash	.034%
Sample of Oil No. 3—Total Sediment, 0.154%	
Analysis of sediment:	
Asphaltic matter	.055%
Carbonaceous matter	.084%
Ash	.016%
Sample of Oil No. 4—Total Sediment, 0.315%	
Analysis of sediment:	
Asphaltic matter	.073%
Carbonaceous matter	.182%
Ash	.060%

True Condit'on of Oils

These analyses give the true condition of the oils to which they are converted before reaching the interior of the cylinder to perform its function of lubrication. The figures in Tables Nos. 1 to 5 show conclusively an increasing degree of oxidation with the number of hours. The engine is run under similar operating conditions. These detrimental conditions can be overcome by a little attention being paid to the design of the lubrication system on the engine. The pistons of a two-cycle engine can be lubricated above the exhaust ports successfully by using a properly designed lubricating oil injection tube and using a properly designed lubricator which pumps only oil and having the feature of an individual pumping unit that can be timed separately in relation to the piston.

To lubricate a two-cycle engine below the exhaust ports the oil port in the cylinder liner, where oil ports are used, should be very small and these oil ports should be arranged to come under the center of the bridge.

I am informed that some engines rely mainly on splash system for lubricating the power cylinder, thereby doing away with the mechanical lubricator. Oxidation is unavoidable in the oils used for crankcase lubrication, therefore the oil for power cylinder lubrication by such methods contain undesirable products due to oxidation. The writer has not had the opportunity to investigate the efficiency of this method.

Although this paper has been confined to a discussion of the methods of lubricating power cylinders of Diesel engines, the writer believes that considerable improvement can be made also in other parts of the lubricating system for Diesel engines.

In conclusion the writer believes that the use of such a lubricating system for power cylinders of Diesel engines as pointed out in this paper will provide a means of applying the lubricating oil to the cylinder liners without having its lubricating quality, specially designed for this service, partly destroyed by oxidation from cylinder gases. It is believed that such a method will effect not only the proper method of lubrication but also a saving in lubricating oil and a materially reduced cylinder liner wear regard-

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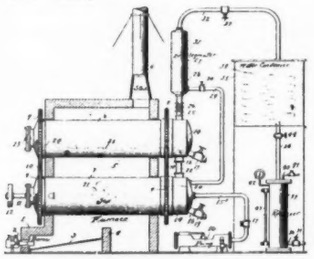
less of the base of crude oil whether asphalt or paraffin from which the lubricating oil is refined.

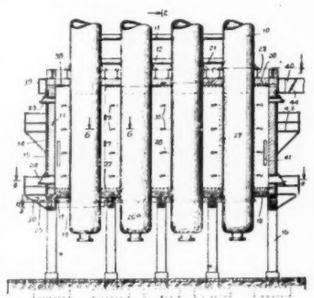
RECENT PATENTS

1,619,922. Apparatus for Cracking Oil. Gustav Egloff and Harry P. Benner, Chicago, assignors to Universal Oil Products Co., Chicago, a Corporation of South Dakota. Filed September 1, 1920, Serial No. 407,402. Renewed September 2, 1926. 6 Claims. (Cl. 196—112.)



5. In an apparatus for treating oil, the combination with a rotating still member having a nonrotating part, a vapor chamber having a main rotating part and a nonrotating part connected therewith, means connecting said still and said vapor chamber whereby they rotate in unison, an oil inlet to said still, a residuum discharge from the nonrotating part thereof, a vapor discharge from said still leading outwardly therefrom through the nonrotating part and entering said vapor chamber through an opening in the stationary part thereof for transferring the vapors from the still to the vapor chamber, and means for discharging vapors from the stationary part of the vapor chamber.

1,621,298. Apparatus for Heating Stills. George D. White, Port Arthur, Tex., assignor to The Texas Company, New York, N. Y., a corporation of Texas. Filed April 5, 1923. Serial No. 630,001. 2 Claims. (Cl. 196—116.)



1. Apparatus for cracking hydrocarbon oils comprising a battery of spaced vertical stills, a furnace chamber disposed about said stills the walls of which chamber are spaced from the stills, a plurality of gas burners extending through opposite walls of said furnace and spaced from each other horizontally and vertically at points intermediate the several stills, the arrangement being such that heat is applied at a plurality of distributed points within the furnace in such a manner as to avoid direct contact of the flames against the still walls whereby hot spots are prevented, and a plurality of flue passages spaced from each other in the upper part of the furnace whereby the furnace gases are caused to travel upwardly through the furnace and are withdrawn at distributed points in the upper part thereof.

1,621,229. Art of Distillation. David Moyes Allan, Halifax, Nova Scotia, Canada, assignor to Standard Development Co., a corporation of Delaware. Filed January 5, 1922, Serial No. 527,110, and in Canada, February 20, 1923. 3 Claims. (Cl. 196—5.)

3. In apparatus for distillation of oil, a still, an expansion chamber, a va-

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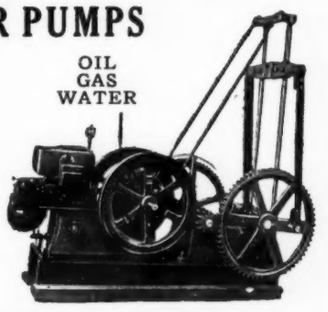

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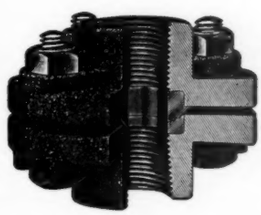

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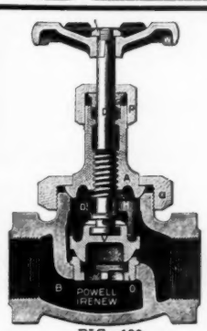

FIG. 190
Globe Valve for 150 and X. H. 250 pounds W. S. P. Sizes ¼ to 3-inch.

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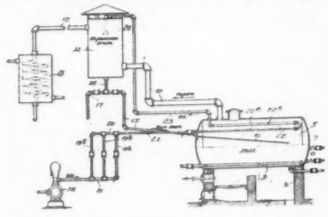
pot line passing from the still to the expansion chamber, means for returning condensate from the expansion chamber to the still, means for heating moisture

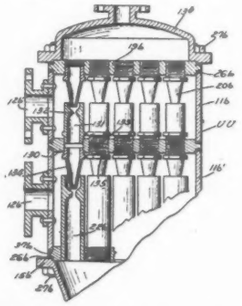


containing oil by the vapors before they proceed to the expansion chamber, and means for feeding the heated moisture-containing oil into said extension chamber.

1,619,348. Process of Producing Lubricating Oils. Gustav A. Kramer, Concord, Calif., assignor, by mesne assignments, to Simplex Refining Co., San Francisco, Calif., a corporation of California. Filed May 9, 1925. Serial No. 29,047. 21 Claims. (Cl. 196—77.)

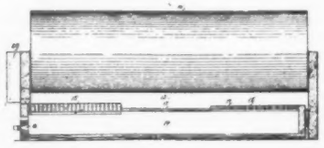
17. A process of treating mineral oils, which comprises: producing a mixture of vapors from a suitable charging stock under a low absolute pressure; cooling said mixture of vapors to a sufficient degree to condense therefrom a certain portion thereof; increasing the absolute pressure on the remaining vapors to a value which is still considerably less than atmospheric pressure; and subjecting said remaining vapors to a further condensation.

1,616,209. Method and Means for Treating Oils. Edwin C. Weisgerber, Long Beach, Calif., assignor to Petroleum Appliance Syndicate, Los Angeles, Calif., a business trust. Filed March 11, 1925. Serial No. 14,706. 6 claims. (Cl. 196—85.)



2. An oil treating device which comprises: means for producing fine subdivision by jetting one fluid within another while both fluids are advancing in the same direction.

1,621,319. Still. Harry E. Gilbert, Bridgeport, Conn. Filed March 20, 1925. Serial No. 16,906. A Claims. (Cl. 196—116.)



1. In a still, the combination of a container substantially horizontally disposed, a firebox having a top in spaced relation to the bottom of the container, a burner at the forward end of the firebox, the top of the firebox being divided

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Conference in June On Standardization At Colorado Springs

J. Edgar Pew, chairman, general A. P. I. Committee on Standardization, announces that the Semiannual Standardization Conference of the Division of Standardization of the American Petroleum Institute will be held in the Broadmoor Hotel, June 15-17, 1927, at Colorado Springs, Colo. All those interested in drilling, and production problems are especially invited to attend.

The general program for this conference as well as the program for each committee will be announced later in detail. Particular attention will be devoted to the development of codes on recommended field practice for the various types of drilling material and equipment under consideration. Especially prepared papers on the proper care and use of equipment were presented at the Seventh Annual Meeting of the Institute at Tulsa in December, 1926, (copies of which will be mailed shortly to each committee member), which will be the basis for such codes. Additional papers on similar subjects will be presented at Colorado Springs. Particular attention will also be given to the use of A. P. I. specifications already adopted, printed and issued.

The committees on belting and on wire rope and manlia cordage are particularly desirous of securing, from handbook owners, information on the results obtained to date from the use of material purchased in accordance with these specifications. Any information on this subject should be sent to the national chairman of the belting and wire rope committees.

Meetings will be held of all committees of the Institute on the standardization of equipment, as listed below:

Belting, Oil Field Boilers, Cable Drilling Tool Joints, Standard Rigs and Derricks, Oil Country Tubular Goods, Rig Irons, Rotary Drilling Equipment, Wire Rope and Manila Cordage, Pumping Equipment and Engines, Steel Tanks for Oil Storage.

Meeting rooms will be provided for each committee, as well as a general assembly room for the group sessions, to be announced later.

HARDING ORDER REVOKED

WASHINGTON, D. C., Apr. 9.—President Coolidge has revoked the Harding executive order of May 31, 1921, under which Albert B. Fall, as Interior Secretary, made the leases of the Elk Hill and Teapot Dome naval oil reserves. President Coolidge's order reads: "Executive order No. 3,474 of May 31, 1921, committing to the Secretary of the Interior the administration and conservation of all oil and gas-bearing lands in naval petroleum reserves Nos. 1 and 2, California, and naval petroleum reserve No. 3 in Wyoming, and naval shale reserves in Colorado and Utah, under the provisions of the acts of Congress approved February 25, 1920, and June 4, 1920, is hereby revoked."

LEGAL

RECEIVER'S SALE OIL BUSINESS

The undersigned will offer for sale at Public Auction under order of the Circuit Court for Wayne County, Michigan, on Monday, April 25, 1927, at 11 o'clock in the forenoon, all of its rights, title and interest in and to the assets of Michigan Refining Corporation.

Sale will be held upon the premises of the Company at its office, 6630 Desmond St., Detroit, Michigan.

The property to be sold comprises the equipment and leasehold interest in Bulk Sales Plant and 26 Retail Distributing Stations in the City of Detroit.

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for February

	Monthly Bbls.	Daily av. Bbls.
*Prairie Pipe Line Co. ..	3,976,000	142,000
Gulf Pipe Line Co.	1,272,393	45,443
Texas Pipe Line Co.	844,129	30,147
Magnolia Petroleum Co.	1,797,183	64,214
Empire Pipe Line Co.	951,598	33,986
Cosden Pipe Line Co.	871,459	31,124
Sinclair Pipe Line Co. ..	1,719,928	61,426
Other lines	11,676,000	417,000
Total February	23,108,690	826,340
Total January	24,093,948	777,224
Difference	985,258	48,116

Shipments

§Prairie Pipe Line Co. ..	4,736,228	169,151
Gulf Pipe Line Co.	1,153,214	41,186
Texas Pipe Line Co.	921,847	32,923
Magnolia Petroleum Co. ..	1,212,370	43,300
Empire Pipe Line Co.	904,514	32,304
Cosden Pipe Line Co.	793,035	28,323
§Sinclair Pipe Line Co. ..	2,353,022	84,036
Other Lines	10,360,000	370,000
Total February	22,434,230	801,223
Total January	23,273,458	750,756
Difference	839,218	50,467

Stocks

*Prairie Oil & Gas Co.	28,500,000
*Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line & Gypsy Oil Co...	7,530,595
The Texas Company	3,494,853
Magnolia Petroleum Co.	3,920,813
Empire Pipe Line Co.	2,635,741
Cosden Pipe Line Co.	2,447,619
*Sinclair Crude Oil Purchasing Co.	18,750,000
Carter Oil Co.	14,238,662
*Other Lines	10,000,000
Total February	93,518,283
Total January	90,410,600
Difference	3,107,683

*Estimated. §Prairie Pipe Line shipments include Texas crude and Sinclair Pipe Line Shipments inclue Wyoming, Texas crude.

NOTE—Stocks do not include approximately 3,200,000 of crude oil held in storage on private tank farms and leases and approximately 2,280,000 bbls. of Texas Panhandle crude in storage in Oklahoma and Kansas.

EASTERN PIPELINES

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

	Jan. '27	Feb. '27
Nat. Transit	131,633.26	139,482.60
S. W. Pa. P. L. ...	91,671.32	86,131.61
Eureka P. L.	356,257.54	360,073.04
Buckeye P. L. (Macksburg) ...	306,320.21	306,133.22
Buckeye P. L. (Cleveland)	8,898.60	9,641.18
Buckeye P. L. (Lima, etc.) ...	105,316.84	118,280.53
Indiana P. L.	7,885.72	10,308.90
Cumberland P. L..	269,494.29	253,098.35
N. Y. Transit	20,624.12	20,720.01
Tide Water P. L..	164,816.27	166,244.50
Pure Oil	181,623.77	150,656.96
Emery P. L.	51,721.92	50,806.49
Paragon Dev.	29,152.24	27,518.82
Pittsburgh P. L. ..	4,492.56	5,450.00
Stoll Ref.	12,571.47	11,799.41
Total	1,742,480.14	1,716,345.62
Daily average ..	56,209.04	61,298.06

Note: Indian Refining Co. also reported other receipts of 318,692.38 bbls. Paragon Refining Co. had other receipts of 111,806.74 bbls. Paragon Development had other receipts of 1,727.51 bbls. Pure Oil had other receipts of 23,458.34 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

	Jan. '27	Feb. '27
Nat. Transit	339,689.42	301,540.53
S. W. Pa. P. L. ..	376,678.56	332,520.45
Eureka P. L.	185,046.54	189,772.61
Buckeye P. L. (Macksburg) ...	152,046.86	143,321.86
Buckeye P. L. (Cleveland)	728.46	735.84
Buckeye P. L. (Lima, etc.) ...	836,059.08	766,276.55
Indiana P. L.	996,930.49	899,418.14
Cumberland P. L..	170,916.10	149,258.83
N. Y. Transit	268,721.23	134,606.31
Northern P. L. ..	146,042.27	149,470.27
Tide Water P. L..	142,906.68	118,783.21
Pure Oil	185,495.89	187,941.11
Emery P. L.	56,726.35	48,549.33
Paragon Ref.	162,514.12	125,377.69
Indian Ref.	327,021.57	296,038.10
Paragon Dev.	26,199.67	29,126.84
Pittsburgh P. L. .	4,316.92	6,213.32
Total	4,378,040.11	3,878,949.98
Daily average ..	141,227.10	138,533.93

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky, at the close of January and February were as follows:

	Jan. '27	Feb. '27
Nat. Transit	958,639.67	1,009,705.83
S. W. Pa. P. L. ..	783,090.22	746,374.61
Eureka P. L.	1,283,959.42	1,326,061.87
Buckeye P. L. (Macksburg) ...	418,744.17	435,819.09
Buckeye P. L. (Cleveland)	60,087.54	76,981.10
Buckeye P. L. (Lima, etc.) ...	3,048,045.04	3,227,532.22
Indiana P. L.	563,842.08	584,982.76
Cumberland P. L..	584,088.08	606,176.77
Southern P. L. ...	418,089.38	420,485.22
N. Y. Transit	676,728.60	661,277.88
Northern P. L. ...	423,641.24	426,553.78
Pure Oil	472,351.27	459,193.89
Emery P. L.	6,125.26	6,932.77
Paragon Ref.	38,841.67	24,907.55
Indian Ref.	66,887.83	91,489.53
Paragon Dev.	10,670.92	11,007.61
Pittsburgh P. L. .	4,170.61	3,679.88
Total	9,718,003.00	10,119,162.36
Increase	263,490.81	401,159.36

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of January and February, showing the gross stocks of the above fields:

	Jan. '27	Feb. '27
Pennsylvania	3,703,521.72	3,708,705.44
Lima	741,567.39	798,170.33
Kentucky	1,034,892.99	1,056,674.37
Mid-Continent ...	4,134,204.33	4,451,184.17
Illinois	103,816.57	104,428.05
Total	9,718,003.00	10,119,162.36

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1924	1925	1926	1927
January	62,638	56,831	55,630	56,209
February	68,023	60,606	60,394	61,298
March	68,721	60,575	61,644	.....
April	71,058	63,062	63,019	.....
May	63,942	59,217	60,580	.....
June	63,230	61,270	64,131	.....
July	64,208	62,639	63,206	.....
August	59,942	59,686	61,815	.....
September	62,920	62,510	64,639	.....
October	64,976	60,995	62,704	.....
November	56,282	59,350	61,774	.....
December	55,814	57,974	58,755	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1924	1925	1926	1927
January	145,518	157,889	156,056	141,227
February ...	148,732	160,863	159,488	138,534
March	147,098	154,591	150,239	.....
April	147,611	151,429	152,371	.....
May	134,997	146,995	160,998	.....
June	143,010	149,467	160,257	.....
July	124,187	161,338	160,945	.....
August	123,120	161,730	151,929	.....
September ..	127,325	156,719	158,915	.....
October	123,170	145,388	161,132	.....
November	124,400	143,582	152,668	.....
December ..	151,392	150,162	136,428	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1925	1926	1927
January	11,353,276	9,859,170	9,718,003
February ...	11,192,924	9,579,354	10,119,162
March	11,158,297	9,438,292	.....
April	11,062,082	9,805,851	.....
May	11,207,562	9,531,757	.....
June	11,093,796	9,585,904	.....
July	11,667,453	9,734,687	.....
August	10,974,481	9,668,947	.....
September ..	10,781,753	9,433,732	.....
October	11,086,850	9,269,806	.....
November ...	11,068,158	9,257,667	.....
December ...	10,458,445	9,454,512	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line Co. at the close of business for the months named and not counted in the stocks and averages reported above.

	Runs	Shipmts.	Stocks
1926—			
February	2,580.23	2,776.19	12,819.45
March	2,754.62	1,732.77	13,841.30
April	3,137.40	4,519.68	12,459.02
May	2,933.29	2,096.35	13,295.96
June	3,217.62	1,655.15	14,858.43
July	3,025.86	4,075.11	13,809.18
August	2,886.59	2,121.21	14,574.56
September ..	2,788.18	3,373.06	13,985.68
October	2,991.86	2,307.75	14,671.25
November	2,810.60	1,664.55	15,817.31
December	2,847.52	5,561.11	13,103.72
1927—			
January	2,641.54	1,470.42	14,274.84
February	2,764.30	1,082.82	15,956.32

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, March 1	2,661,980.68
Runs from wells	570,400.72
Other receipts	426,905.04
Regular deliveries	402,200.33
Other deliveries	591,721.73

The amount of Illinois oil run by the Tide Water Pipe Co. in February was 25,430.44 bbls. and deliveries were 74,750.38 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1926—		
February	632,611.99	506,310.51
March	753,300.74	524,625.95
April	610,957.04	487,604.00
May	682,416.67	498,456.90
June	693,102.34	558,054.94
July	713,490.66	490,992.82
August	701,795.92	555,766.59
September	688,798.66	516,083.05
October	681,648.96	531,467.39
November	651,263.33	498,439.37
December	668,909.58	587,947.61
1927—	Runs	Deliveries
January	621,421.03	530,085.98
February	595,831.16	476,950.71

The Tide Water Pipe Co., Ltd., also delivered in February, 249,851.65 bbls.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per day—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
November	6,400	16,600	27,633	23,533	17,300	91,467	.....	.....	.....	.....	.....	91,467
December	13,645	7,129	39,645	7,419	9,774	77,613	.....	.....	.....	.....	.....	77,613
January	5,097	8,258	26,290	15,932	14,807	70,356	.....	.....	.....	806	806	71,161
February	26,214	3,036	32,750	8,571	18,250	88,821	.....	.....	.....	.....	.....	88,821

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
November	14,867	7,167	55,967	5,700	27,433	111,133	18,133	35,200	2,500	2,900	58,733	169,866
December	12,484	10,613	56,129	7,453	24,064	110,742	12,548	40,742	2,903	10,839	67,032	177,774
January	16,032	8,226	64,387	4,065	31,064	123,774	7,903	43,639	.....	4,123	55,645	179,419
February	12,000	14,429	87,286	5,321	26,714	145,750	4,786	46,786	2,143	3,607	57,322	203,072

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

1926—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
March:	Month	18,825,786	14,312,886	11,014,238	3,334,837	5,115,837	1,889,636	3,161,250	3,349,000	61,003,520
	Daily average	606,283	461,706	355,298	107,577	165,027	60,956	101,976	108,032	1,967,536
April:	Month	18,091,771	14,468,190	10,799,760	3,330,130	5,137,510	1,959,570	3,231,404	3,183,000	60,191,335
	Daily average	603,059	482,273	359,992	111,004	170,917	65,319	104,239	106,100	2,006,327
May:	Month	18,667,144	14,607,004	11,940,797	3,516,640	5,482,939	2,231,938	3,459,489	3,317,000	63,122,955
	Daily average	602,166	467,968	385,187	113,440	176,869	71,998	111,596	107,000	2,036,224
June:	Month	18,269,417	14,073,510	11,783,200	3,246,470	5,004,150	2,206,230	3,437,905	3,265,000	61,545,093
	Daily average	608,981	469,117	392,740	111,549	168,822	73,541	114,597	112,167	2,051,536
July:	Month	18,743,199	14,657,482	13,982,759	3,583,267	5,019,892	2,173,813	3,336,664	3,430,000	64,917,076
	Daily average	604,619	473,822	451,089	115,557	161,932	70,123	107,634	110,322	2,094,099
August:	Month	18,765,030	14,613,236	17,092,586	3,681,436	4,878,191	2,190,739	3,467,697	3,329,500	68,024,465
	Daily average	605,325	471,556	551,406	118,756	157,361	73,896	111,538	107,726	2,194,338
September:	Month	18,104,954	14,466,510	17,586,100	3,456,060	4,803,230	2,079,340	3,141,123	3,330,000	66,755,317
	Daily average	603,498	482,217	586,003	115,202	160,441	69,328	104,704	111,000	2,225,194
October:	Month	18,966,068	15,720,683	19,001,323	3,714,627	4,625,138	2,166,559	3,071,720	3,398,000	70,664,189
	Daily average	611,808	507,119	612,946	119,827	149,198	69,889	99,088	109,613	2,279,489
November:	Month	19,173,128	16,876,950	18,598,160	3,593,490	4,299,480	2,054,911	2,842,587	3,216,000	70,649,706
	Daily average	639,104	562,565	619,772	119,783	143,316	68,497	94,752	107,200	2,354,990
December:	Month	20,376,950	17,882,908	19,758,591	3,654,156	4,266,189	2,018,734	2,658,301	3,312,000	73,823,839
	Daily average	654,096	576,868	637,312	117,876	137,619	65,120	85,752	106,871	2,381,414
1927—										
January:	Month	20,184,872	19,030,745	18,546,990	3,668,323	4,076,469	1,905,570	2,610,302	3,332,500	72,355,772
	Daily average	651,125	613,896	598,290	118,333	131,499	61,471	84,203	107,500	2,366,318
February:	Month	17,982,711	19,752,348	16,483,292	3,349,416	3,574,256	1,784,104	2,385,135	3,007,200	68,318,462
	Daily average	642,240	705,441	588,689	119,622	127,652	63,718	85,183	107,400	2,439,945
	Total 12 months	226,051,070	190,367,462	186,572,881	42,221,902	56,133,891	24,662,244	36,793,578	39,570,200	802,373,208
	Daily average	619,318	521,554	511,159	115,677	153,792	67,513	100,804	108,412	2,198,283

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